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Pressure of the Ocean.

A correspondent—L. W. Trask, of Hitchcockville, Conn.—sends us an extract published by a cotemporary on the above subject. The article in question treats of the compressibility of water, and states that at the bottom of the ocean, it is scarcely, if any, denser than at the surface, and from this the conclusion is drawn in the following words:—"It is just as easy, therefore, to move through the water at the bottom of the ocean as it would be at the surface." Our correspondent objects to the correctness of this conclusion. He says:—"From my own experience as a submarine diver in both salt and fresh water, I know that this is not so. In a depth of 100 feet of water, a diver moves only with difficulty. This I know is true, and all the divers with whom I have conversed on the subject and the number is not small—have experienced this difficulty of motion under water."

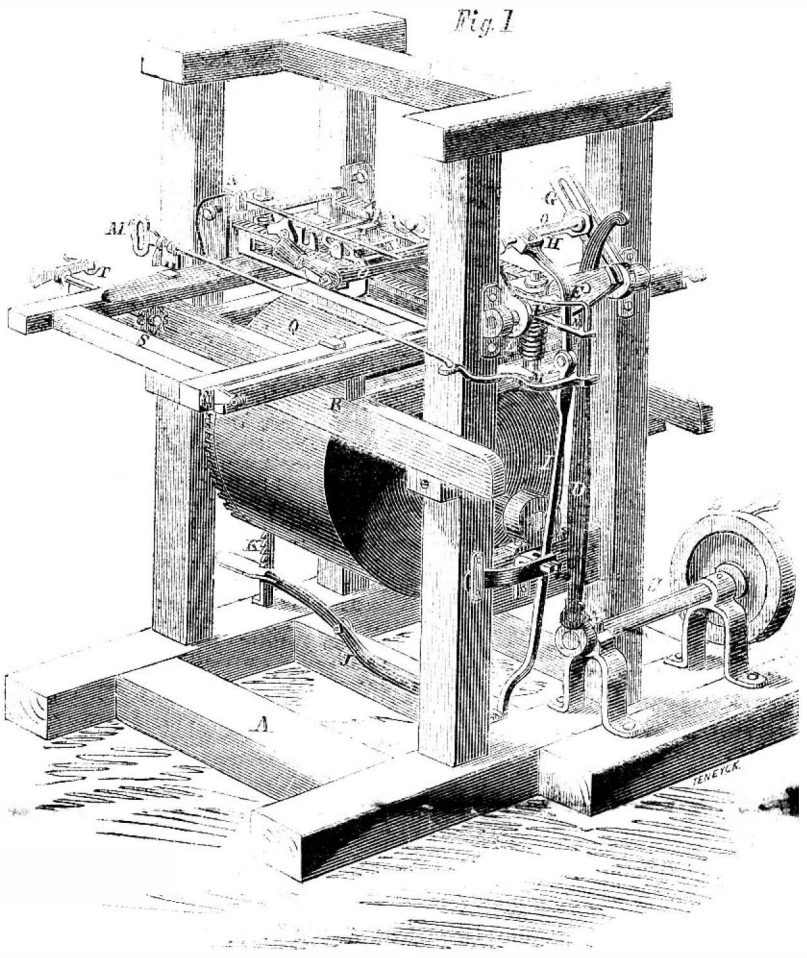
Our correspondent's practical experience accords with that of every person who has dived only to the depth of ten, twelve, or sixteen feet, as we can also testify, and his experience also accords with the deductions of science. Water is, indeed, but slightly compressible; but at the depth of six miles in the ocean, it must be more dense than at the surface, because at that depth the pressure on the square inch is about 7,000 tuns. At the depth of 100 feet, the pressure is 43·40 pounds on the square inch, and a diver, at this depths (although the pressure is equal on all sides) must experience more difficulty in moving about than when at the surface, where the pressure of the atmosphere is only 15 pounds on the square inch.

Peculiar Bricks.

Bricks which are glazed on the outside are unfit for building purposes, because they cannot be cemented by common mortar, and therefore require to be porous. But this porous quality involves another evil, namely, that of absorbing moisture, hence brick walls in wet situations or when exposed to severe rain storms, become very damp. Could bricks be so made that their inside would become glazed or vitrified, they would prevent the absorption of moisture, while at the same time they would be perfectly adhesive. We learn by the London *Builder* that such bricks have recently been made in that city by Wm. C. Forster, and that he has taken out a patent for them. It is not stated how they are made, but we can easily divine a method for accomplishing this, namely, by placing some flux, like borax or soda, in the heart of each brick, whereby the interior will become vitrified, with a heat much lower than that of the outside. Such bricks cannot be made so cheaply as the common kind, but for some purposes it may be well to manufacture them even at considerable extra cost.

ARNOLD'S HIDE SHAVING MACHINE.

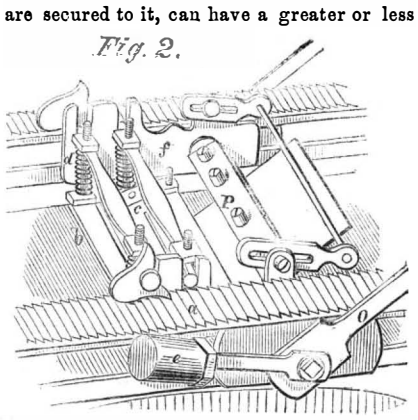
Fig. 1



Despite the croaking of a certain school of philosophy, the battle cry of which is "the times are out of joint," there is still some skill left in the world, and mankind is not quite so bad as on the surface it would seem to be. The inventor of the machine which is the subject of our engraving—Horace L. Arnold, of Elk Horn, Wis.—is an illustration to the point. Once upon a time he was full of enthusiasm on the subject of rotary engines, but by our advice he turned his attention to the invention of things more feasible and really useful; the consequence is that he has invented a car seat and couch, and the excellent hide shaver we are about to describe. In his letter to us he says:—"Please accept my most sincere thanks for your efficient aid in this matter, nothing could tempt me to apply for a patent through any other agency save yours. To you I am indebted for saving me from devoting my best years and all my means to the rotary engine, and for important information very many times, as well as for the choicest mechanical literature weekly in the SCIENTIFIC AMERICAN. I shall always be grateful to you." When such letters as this come to us from all parts and persons, we cannot but believe that if "the times *are* out of joint," it will not take much to put them in again, and by spreading information broadcast over the land, we try to give a helping hand to that good work.

This machine is intended to shave hides, and it will cut a shaving of uniform thickness from the hide, following its inequalities, or it will cut shavings so as to reduce it to a uniform thickness throughout. A is a frame, power being received by the working parts from the wheel, B, and a shaft, C, that by a crank, gives an up and down motion to the connecting rod, D. At the top of D there is a slot that catches on a pin, E, in the double arm that projects from the shaft, F, to which is attached the slotted arms, G. By this means, the arms, G, receive a reciprocating motion in an arc of a circle. The rod, D, works in a guide, M, that is connected to a rod and handle, M′, by which the workman can throw it in and out of gear with E, so as to move F, and the cutter moved or not as desired without stopping the motion of B and C. In the grooves of G a rod, H, is capable of sliding so that the connecting rods, O, that are secured to it, can have a greater or less

Fig. 2.



length of stroke imparted to them, and H is moved in the grooves by the rod, I, that is connected to the lever, J, which the workman operates by his foot and secures in the proper position by the rack, K, a spring pressing against I tending to keep it in the rack, and facilitating the back motion of G. The cutter will be better seen in the detached view, Fig 2, it is moved by the rods, O, on the toothed ways, *a*, that can be raised or lowered to regulate the thickness of the shavings, by the screws, L, one at each end, that are operated by the nuts, N, and the crank-rod, N′. The cutter or knife, P, is attached at its center to the frame, *f*, and by a cross-bar at its end can be secured at any desired angle, and there is a grooved piece in front, *c*, through the grooves of which the knife passes, making it into a kind of spokeshave or plane when necessary, as for harness leather; this is kept on the leather by springs and allowed to play by being in open grooves in the frame, *f*. A rubber, *b*, is kept down and allowed play in the same way, *d*, being the springs; this rubber has cams on the ends of its upper bearing which in the return stroke catch in the teeth of *a* and lift it off the leather when the knife is not cutting. A weight, *e*, is secured to a lever on the shaft of P which keeps it on the leather and makes it cut. The hide is secured to the frame, S, by the clamp seen in the front of it, and allowed to lay on a flat table on one part of the drum, Q, the curved periphery of which can also be used when necessary. The frame, S, can be moved back and forth (by the hand crank, T,) upon the frame, R, which moves on A (by a hand-wheel and gear not seen) together with the drum, Q, that slides upon its shaft. The hide can be clamped upon Q, which can be rotated to bring every part of the hide under the action of the knife. The whole machine is remarkably simple, and all the parts are under the enable control of the operator who has not to change his position to perform any change that is required; and the hide is as thoroughly shaved, unhaired or fleshed, as if done by hand, without the fatigueing labor or loss of time. We have described it sufficiently minutely to enable all to understand it, and our readers will at once see its many and great merits. It is compact, simple, and efficient, and any further particulars may be obtained by addressing the inventor, as above.

Instruction and Science for the People.

The government of Great Britain has a department of science and art which takes charge of a school of art, where the best masters teach at a trifling cost to the student, and where all the facilities of a picture gallery and models are afforded; and it also cares for a museum of geology and mining school, a college of chemistry and a technical museum.

During the winter months, the professors give courses of six lectures to the working men, on their special branches of knowledge, and the charge of admission is but 12 cents, to each course, thus placing information of the truest kind within the reach of all. By them, the brilliancy of an experiment or illustration is never thought of, its aptness being their only care, and as the audience go to the lecture room to learn, and the professors to teach such secondary considerations are dispensed with, and yet the lectures are by no means *dry*, on the contrary they are very pleasant, for each lecturer being fully imbued with the spirit of his subject, he cannot fail to be always interesting and entertaining. Will not some of our well-known philanthropists endeavour to arrange for courses like this by the next season? Cheap and good, it would be a novelty for which they would receive the gratitude of thousands. Prof. Wagner of Philadelphia gives *free* science to the people; why cannot our other cities have it at least accessible to all We give them some to read, who will give them some to hear?

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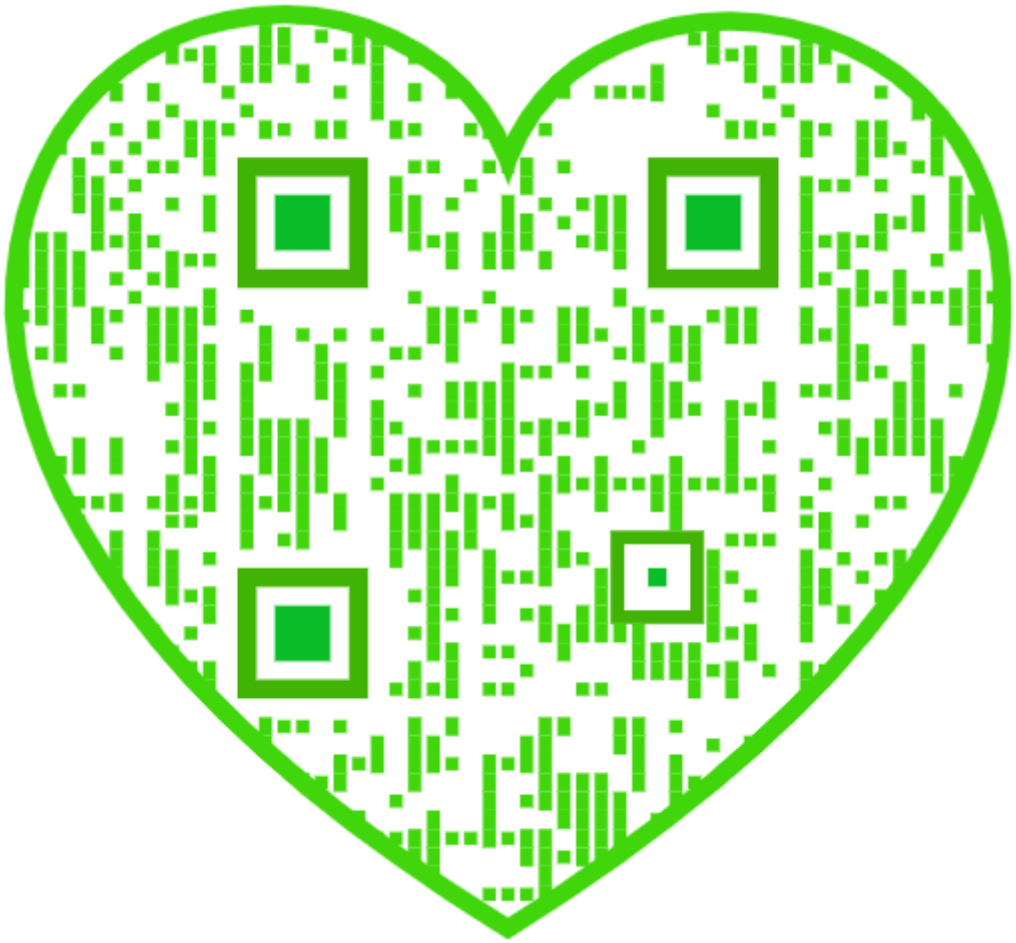

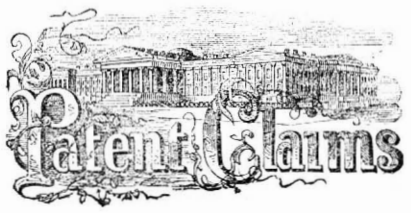

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*** Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

WATER WHEEL—Ahraham Andrews, of Bernville, Pa. : I claim the curved concave buckets, in combination with the spiral chamber beneath, substantially as described.

CAR-COUPLER—J. B. Atwater, of Berlin, Wis. : I claim the arrangement of the falling gate, C, provided with projection, n, loosely hinged down a turned over at its top, and provided with inclined projection, o, adjustable piece, i, pin, E, lever, D, and catch, m, the several parts being combined and operated substantially in the manner and for the purpose specified.

REGISTER FOR SHEETS OF PAPER—S. T. Bacon, of Boston, Mass. : I claim punching or cutting holes in sheets of paper, for the purpose of securing a more perfect and rapid register in printing and paper-folding machines, substantially as described.

DUMPING WAGON—Theodore Bailey, of Friendship, Va. : I claim, first, A wagon which dumps itself by the approximation of the wheels, as set forth.

Second, The combiuation of a spring catch, H, with the divided reach, substantially as and for the purposes set forth.

[This wagon differs from all other dumping wagons from the fact of its dumping its load by the backing of the team, and thus dispensing with any labor on the part of the driver to accomplish the same. The arrangement is exceedingly simple, and can be applied at a small cost to any four-wheeled wagon in use, it simply being necessaay to have the reach divided so as to allow the front and hind wheels to approach in backing the team. The body, of course, is hung at the center of its length, and is arranged to slide over the hind axle until its axis passes the center of gravity, at which point the body tilts and dumps its load. A spring-catch locks the body when the team is moving forward. This wagon has been found to work admirably on a large scale for dumping logs, manure, stone and grain. A premium was awarded for it at the late Richmond Fair. We regard the improvement as a step in advance of anything which has heretofore been invented in dumping wagons, as it is so very simple and yet meets all the requirements of such a device.]

CONNECTING HUBS AND AXLES OF VEHICLES—David Beard, of Shippensburg, Pa. : I claim, first, The peculiar manner of effecting a combination of the hub, short auxiliary axles and intermediate stationary axle, whereby internal auxilliary bearings for the short axle and an external main bearing for the hub are provided, substantially as and for the purposes set forth.

Second, Making the end of the main axle convex, and the main bearing in the inner end of the hub concave, substantially as and for the purposes set forth.

YOKES OF SHIPS' RUDDER POSTS—W. Beers, of Milan, Ohio : I am aware that india-rubber has been employed in various ways for producing tight joints and for protecting parts of machines liable to injury from friction or concussion; therefore, I do not claim the use of rubber as a new device.

But I claim the construction of a divided yoke for rudder posts, in combination with the employment of a guard of india-rubber, or other elastic packing, between the yoke and the post, in order to prevent injury to the rudder post, and also to facilitate the repair of damages produced by the common yoke, substantially as set forth.

SHIPS' STEERING APPARATUS—W. Beers, of Milan, Ohio : I claim, first, The slotted arm or arms constructed, arranged and employed in the manner and for the purposes substantially as set forth.

Second, I claim the elastic friction collar or collars, S, and the elastic guard or guards, P, in combination with the above described steering machine, for preventing concussion and friction, substantially as described.

Third, I claim the friction rollers, L, in combination with the screw-nut, G, for preventing the nut from binding upon the screw, substantially as set forth.

TREATMENT OF VULCANIZED RUBBER—H. W. Beins, of New York City : I claim the process described of cementing vulcanized india-rubber to, and covering it with a new layer or unvulcanized india-rubber composition in the manner and for the purposes set forth.

ATTACHMENT TO RULING MACHINES—J. B. Blair, of Philadelphia, Pa. : I claim the application of one or more magnets (electro-magnets) to any ruling machine for ruling paper, in snch mauner that the magnets shall, either directly or indirectly, be made to control the operations of the pens, through the agency of the paper in braking, closing, or changing the circuit of electricity.

GRAIN SEPARATORS—J. L Booth, of New York City: I do not claim, broadly, the invention of endless belts for elevating and carrying grain or other materials.

But I claim, as an improved article of manufacture, a grain separator, composed of a box, A, belt, B, plates d, hopper, C, pulleys, b b, and otherwise constructed, substantially as shown and described for the purpose specified.

[Foreign substances are in this invention separated from the grain, and one kind of grain is separated from another, by impelling it by suitable machinery and with the proper velocity against the air, so that the difference in the specific gravity of the parts to be separated, aided by their form and shape, will effect the desired end.]

FISH-TRAPS—Daniel Bowman, of Tampico, Tenn. : I claim making the dams to incline towards each other and up stream, so as to shelve over and make a dark recess to induce the fish to run towards the shute and trap, when the water is clear as well as when it is muddy.

I also claim the cover of the shute, for the purpose of shading the water, and making it dark, so that the fish will be induced to enter the shute and trap.

TRUNKS—Henry Clifton, of Buffalo, N. Y. : I claim, in combination with a trunk made up of a series of drawers such as described, the hinged plates for holding and locking said drawers to the frame of the trunk through the intervention of the lid and its lock, substantially as described and represented.

HORSE RAKES—I. C. Burget, of Davenport Center, N. Y. : I claim, first, The arrangement of the treddles J J, hung to the frame, in combination with the rake-bar and yoke for raising one end of the rake without disturbing the other, substantially as set forth.

Second, The combination of the springs, g, with the arm, E, and catch plate, I, for holding the rake-bar in position, and at the same time to allow it to yield bodily to any obstruction there may be upon the ground, substantially as set forth.

SEWING MACHINES—J. H. Cooper, of Philadelphia, Pa. : I claim the combination of the shuttle-holder, n, arm, L, crank, K, and arm, M, or its equivalent, when the said holder, n, is attached to or forms a part of the arm, L, when the latter is carried by the crank, K, and when the whole of the parts are arranged for joint action, substantially as and for the purpose set forth.

ASHES SIFTERS—Allen Cummings, of New York City: I claim the combination of the pyramidal or conical-formed distributor interposed between the entrance and the sieve, the latter being of similar form inverted, these being arranged in relation to each other and to the diaphragm and receptacles, substantially as and for the purpose explained.

CULTIVATORS—C. H. Dawson, of Jacksonville, Ill. : I do not claim, broadly, placing one plow by the side of another to form a gang-plow, nor do I claim placing one plow before another, both being secured to one beam, and one adjusted lower than the other to form a subsoil plow, for such devices have been previously used.

But I claim the plow-beams, D D, arranged as shown in connection with the roller, O, applied to the machine, substantially as and for the purpose set forth.

[A series of plows are attached to an adjustable frame, which is connected to an axle, and so arranged that they may be placed higher or lower as desired, and the device is capable of being used as a gang or subsoil plow. In connection with the plows, a roller is placed that crushes and rolls down weeds before them, thus facilitating their work.]

LAMPS—M. A. Deitz, of Brooklyn, N. Y. Ante-dated Sept. 8, 1858: I claim the arrangement of an air-chamber, d, in the top of a lamp having a flat wick, when said lamp is provided with a cone or deflector, B, for feeding air to the flame, and the air-chamber, d, with a series of holes, z, for the admission of fresh air, and openings, f, for its passage upwards along the sides of the wick tube, or their or either of their equivalents, in the manner and for the purposes substantially as set forth.

MACHINES FOR FOLDING AND REGISTERING PAPER—A. F. Endriss, of New York City: I claim the arrangement of a series of folding knives, F F' F'', at right angles to one another in the same sliding frame, B, which is constructed and operated substantially as set forth.

I also claim arranging the sliding-frame, B, in such a manner that it operates a registering apparatus, K, by means of a lever, o, substantially as and for the purpose specified.

ROTARY PUMPS—J. L. Fagan, of Anaqua, Texas : I claim the combination of the rotating hollow shaft B, provided with a valve, b, the cylinder, A, ttached to said shaft, perforated at a, and having the adjustable or hinged valve or piston, H, secured within A, and the stationary stop or cut-off, I, attached to the bed-plate C, and fitted within the cylinder, A, the whole being arranged and applied for joint operation substantially as and for the purpose set forth.

[The object of this invention is to obtain a submerged pump of very simple construction, one to which the motive power may be readily applied, and that will be efficient in its operation, and not liable to get out of repair. A rotating cylinder is employed provided with a valve or piston, and used in connection with a stationary stop or cut-off placed within the cylinder, the latter being attached to a tubular shaft, and the whole arranged to attain, when operated, the desired end.]

BALLOONS—J. P. Gage, of New York City : I am aware that the idea of producing an advance or lateral motion of balloons by pressure upon the air of flat surfaces, fans, or wings, has been before entertained. I do not, therefore, claim that as my discovery and invention.

But I claim operating upon the air by the instrumentality of the balloon itself, constructed in a diamond or lozenge shaped figure, or any other substantially similar figure presenting a flat surface to the air, arranged and adjusted with the car suspended from the lowest central point of the balloon by a rod with link-joints or their equivalents, and operated by the fore-and-aft and side halyards. in the manner and for the purposes described.

I also claim the manner of arranging and adjusting a diamond-shaped flat frame or surface (or any similar shape) to a spherical balloon, with the car suspended underneath, as shown, operating in the manner and tor the purposes described.

COTTON SEED PLANTERS—C. C. Garrett, of Spring Hill, Ala. : I claim, in combination with the wheel, J, and brushes, j j, the adjustable plates, k k, arranged substantially as and for the purpose specified.

[In this invention a rotating toothed wheel is employed in connection with stationary stripping brushes, the wheels and brushes being placed in the bottom of a seed box which is provided with adjustable plates, the parts being arranged to operate, so that cotton seed may be planted in the same state that they are discharged from the gin, and the discharge of seed regulated as may be desired,]

OPERATING PUPPET VALVES OF STEAM ENGINES—Samuel Gaty and Omos Howe, of St. Louis, Mo.: We claim, first, The steam lifters, J J', exhaust lifters, K K, and pupet heads, B B', with their respectiee faces as described, for the purpose of operating steam and exhaust valves and puppet valve steam engines.

Second, The lifter, J, in combination with the jointed lifting piece. T, puppet-head, B, and graduated cut-off ring or sector, M, for the purpose of producing a variable expansion motion, self-regulating or otherwise, substantially as described.

Third, The relative adjustment of the cut-off ring, M M', for the purpose of admitting steam in equal quantities in each end of the steam cylinder in the manner described.

STEAM GAUGE—W. Y. Gill, of Henderson, Ky. : I claim constructing a steam gauge, in which a piston acts in opposition to a spring, in such a manner that the lower portion of the same acts as an alarm by means of openings c, and so that the indication may be marked on one or more sides of the upper portion E, of the stem, substantially as specified.

Second, Constructing the portion c, of the piston of a smaller diameter than the lower and upper portion, E B, and arranging the spring, F, on the portion, C, above the lower packed portion, B, and below the indicating portion, E, substantially as and for the purposes set forth.

[This is a very good steam gauge which calls attention to the pressure in the boiler, by the steam escaping through small openings, each opening representing a certain amount of pressure, which a finger connected with a piston and spring indicateson a dial.]

BURNING FLUIDS—Jonathan Griffin, of Stanford, N. Y. : I claim the burning fluids, A C and D, formed in the manner and of the materials substantially and for the purpose set forth.

COTTON HARVESTERS—John Griffin, of Louisville, Ky., : I claim the cylinder, C, one or more provided with a perforated plate. a, flexible tube or tube d, and made to communicate with the steam boiler, A, by, means of the tubes f g D, substantially as and for the purpose set forth.

[Wonders we are told, will never cease, and of the truth of this we are every day more firmly convinced; this invention in an illustration, "picking cotton by steam!" is indeed a novel idea. Tne inventor connects a flexible tube with a cylinder provided with a perforated plate and connected with a steam boiler, so that a vacunm may be produced within the cylinder, and the cotton picked from the bolls on the standing stalks, by atmospheric pressure, the tubes being presented to the cotton by suitable attendants. In carrying out this invention the inventor designs to have the cylinder above mentioned, connected with the boiler of a traction engine, in order to facilitate the transporting of the machine and the moving of it from place to place, or from row ro row, in the course of its operations. He also intends to use several cylinders and a plurality of tubes, so that many hands may be employed, and a number of rows of cotton be harvested simultuneously.

METHOD OF OPEBATING FARM GATES BY APPROACHING VEHICLES—A. J. Hamilton, of Kewaunee, Ill. : I claim, first, in combination with the two road lever, D D', constructed as described, the rigid actuating rods, K and m, crank levers, h, latch rod g, swivel bar, b, and latches e, and d, substantially as described, for the purpose set forth.

Second, In combination with the road levers, D D', the elevations or hedges E, and E, as described for the purpose set forth.

CULTIVATORS—Theodore Heermans, of Mitchellville, Tenn. : I claim, first, The screw-tapped shoulder or flange, c, and screw shank, b, of the cultivator teeth, in combination with the screw nut, d, having a series of auxiliary screw, f, in the manner and for the purpose described.

Second, In combination with the above the specified arrangement of large and small cultivator teeth, A B C, for the purposes described.

[In cultivators generally, the teeth are all made of the same size or width. Owing to this the hind teeth which are used for closing in the furrows formed by the front and intermediate teeth form furrows just as wide as those formed by the front and intermediate teeth; the ridges thus formed are left open and the ground consequently is left full of large furrows instead of in a level condition. Mr. Heerman's arrangement of narrow teeth behind and opposite the spaces between the intermediate large teeth obviates this perfectly, as the narrow teeth split the furrow slices, and cause the soil to fall into the ridge, and thus leave the ground in a comparativly level condition. Another difficulty with cultivators in use, is, that of the teeth working loose at the shoulders and becoming bent. Mr. Heerman's arrangement of nut and stop pin overcomes this difficulty, as it allows of the teeth being kept always right at the shoulder. We think these improvements, will be very useful attachments to all cultivators in use.]

COTTON SCRAPERS—John Henderson, of Bluff Springs, Miss. : I clain the forked bar, F, and brace bar, C, in combination with the beam, B, and wings, A, of a double winged cotton scraper when constructed and arranged in the manner set forth.

MACHINE FOR PRINTING RAILROAD AND OTHER TICKETS—R. M. Hoe, of New York, N. Y. : I claim, first, the peculiar mechanism or its equivalent for moving the registering disks on their axes at the proper times, by which means the tickets are numbered consecutively, substantially as described.

Second, I claim giving such a movement to the registering disks, as will cause said disks to approach, press against, and travel with the impression cylinder, thus giving an impression to the roll of paper, then recede to change the figures of the disks, and allow the inking roller, c 31, to perform and then again to approach the impression cylinder, and so on as before, substantially as described.

Third, I claim the adjustment of any derangement of the registering disks caused by slip, jar of the machine or other cause, by means of the plates, c 32, and c 33, or any other means, substantially the same.

Fourth, I claim inking in a different color the registering figures, by means of a separate inking apparatus, substantially as described.

Fifth, I claim the printing the numbers on the tickets, while the said tickets are continuously advancing in the manner substantially described.

Sixth, I claim the guide, c 39, placed between the impression cylinder, and the cutter, Y, or its equivalent for retaining the strip of continually advancing paper, in its proper direction, while its lower end is stopped by the action of the cutter when separating a ticket from the roll.

Seventh, I claim the combination of the parts by which the tickets are deposited (after being cut) in a vertical position in contra distinctting to flawise in the trough, c 43, destined to receive them.

Eighth, I claim the combination of the slide, c 46, the spring catches, c 44, c, 44, and the sliding block, c 45, by which the accumulating tickets are kept in a vertical position.

ATTACHING CARRIAGE THILLS TO AXLES—F. L. Kidder, of Williamsburg, N. Y.: I claim the arrangement and combination of the pivoted spring-plate, E, thill, C, spring, f, hook, D, and self-adjusting key, d, as and for the purpose shown and described.

[In this invention pins or rods are fitted between projecting ears that are attached to clips which encompass the front axle, one near each end, having metal hooks or clasps attached, one to the back end of each thill; these hooks or clasps encompass the pins of the clips, and are secured on the clips by keys in connection with hinged pressure-plates. The connection is by this means rendered perfectly secure, and all wear is compensated for, so that there will be no unnecessary play or vibration of the parts forming the attachment.

CORN HARVESTERS—J. H. Kite, of Conrad's Store, Va.: I claim the combination and arrangement of the horizontally revolving-cutters, i i, vertically revolving bevel-wheels, K K, having plain peripheries, endless apron V V V, axle, G, hollow shaft, H, and peculiar spring clutch arrangement, N N, P S', g r, substantially as and for the purposes set forth.

MACHINE FOR TURNING IRREGULAR FORMS—D. H. Krauser, of Pottsville, Pa.: I claim, First, The manner of causing the carriage, L, which supports the work to traverse over the cutters by means of the pulleys, E F, e, and G, belts, c and K, endless chain, m, crank-arms, I, and connecting-rods, K, arranged and operating as before described, in combination with the means described for turning the work on its axis through the plates, M, bent levers, N, pawl, s, and ratchet-wheel, o, substantially as set forth.

I do not claim the reverse pattern wheel, W, in itself as new, but I claim, Secondly, The arrangement of the pulley, Q, belt, v, spindle, R, in frame, S, with the reverse pattern-wheel, W, arranged and operating as set forth and described.

MOLDING FEMALE SCREWS—Edward L. Lamb and Samuel Wood, of Keokuk, Iowa : We claim the match-plate, a a', having both the exterior and interior of the pattern formed on it, when the same is divided vertically on a center line, adapted to a suitable flask, and resting guides, on which the two halves of the plate can be withdrawn laterally in opposite directions from the core substantially as described, for the purpose of molding female screws or other articles which do not admit of having the pattern removed vertically from the core.

METALLIC LINING FOR WATER COOLERS—Thomas Lavender, of Philadelphia, Pa.: I claim the lining or casing of an ordinary metallic vessel, with tin prepared and applied in the manner and for the purpose substantially as described.

CLOTHES FASTENER—Lucius Leavenworth, of Tremansburg, N. Y.: I claim a clothes-fastener made of a single piece or block, and having an open, angular or curved groove therein to receive and hold the line and clothes upon it by diverging or kinking said line, substantially as described, and thus simplifying and cheapening the clasp by dispensing with the button heretofore used.

CHIMNEYS—Jos. Leeds, of Philadelphia, Pa.: I claim in combination with an outer chimney or casing, A, and an inner passage, B, two or more ducts or passages between the two for heat, ventilation or draft, when said inner passages or flues are made by setting on top of each other iron sections with flanges upon them, substantially as described.

COTTON-PRESSES—Nathaniel J. Lilly, of Selma, Ala.: I claim the combination of the boxes, B B', bar, A, and followers, F F', with the shaft, C, having the opposite ratchets thereon and the swinging-weighted catch, d, hung in the bar, A, together with the rack, R, and pinion, P, the whole operating as set forth.

MACHINE FOR CUTTING STAVES FROM THE BLOCK—James Little, of Evansville, Ind.: I claim the hollow cylinder, E, provided with the knives, h h, and guage-strips, K, in connection with the bed, B, and the feeding-belts, H H, or their equivalents, the parts being arranged to operate substantially as and for the purpose set forth."

[This invention consists in the employment of a revolving hollow cylinder provided with knives and gages, and having a stationary bed-plate and feeding device fitted within it, the whole being so arranged that it will cut staves very rapidly and perfectly.

CULTIVATORS—Daniel Markham, A S. Markham and David Eldred, of Monmouth, Ill.: We claim the frame, A, formed of two parts, a a, connected by the traverse bars, b, and provided with the sliding or adjustable frames, C C, with the bars, E, and plows, F, attached, substantially as and for the purpose set forth.

[The object of thisinvention is to obtain a cultivator with which corn and other "hoed" crops may be cultivated until they attain a considerable hight, without being thrust down or at all injured by the cultivator, and the parts of the implement so arranged that it may be readily manipulated. By this invention the cultivator may be much more used than hitherto, and a perfect cultivation of the crop and a consequent increase of "yield" obtained.]

SEEDING MACHINES—Daniel Markham, A. S. Markham and David Eldred, of Monmouth, Ill.: We claim the adjustable standards, H', M, knife. L, share, K, wings or mould-boards, J J, with or without the tube, I, arranged for joint operation, substantially as and for the purpose set forth.

[The furrows which receive the seed are by this invention formed in an improved manner, so that all roots, weeds, the remains of previous crops and such like rubbish are prevented from interfering with the proper forming of the furrows, and the ground, when planted, is left in proper state for the early use of the cultivator or other implement used in subsequent cultivation,]

REFRIGERATOR—H. L. McAvoy, of Baltimore, Md.: I claim the combination of rising and falling shelf-frame with a non-conducting refrigerator casing, substantially as and for the purposes set forth.

[This invention consists in the combination of a dumb-waiter with a refrigerator. The dumb-waiter shelves rise through the top of the refrigerator, and expose the articles on them to view. The elevation is effected by cords and pulleys. By this invention, the cold air cannot escape, as the refrigerator is always opened at the top, and as the cold air cannot escape warm air cannot enter, and therefore the air in the refrigerator is always kept at a uniform temperature. This appears to be a capital arrangement.]

COOKING-STOVES—Josiah V. Meigs, of Nashville, Tenn.: I claim the arrangement of the bottom plate of the oven in the same plane as the top plate of the fire-pot, in connection with the arrangement of the flues leading from the side of the fire-pot directly beneath the bottom of the oven and around it, substantially as described for the purpose set forth.

CHURN—Jeremiah Mitchell, of Gosport, N. Y.: I claim the revolving-box or churn when constructed and and operated substantially in the manner and for the purpose set forth.

MACHINE FOR SHEARING SHEEP—William F. Morgan, of Rochester, N. Y.: I claim the arrangement of the cutting device, scroll-spring, f, and necessary gearing, substantially as described, and for the purpose set forth.

I further claim the pressure lever, t, substantially as for the purpose described.

[The shearing of sheep is one of the oldest of occupations, and has generally been a somewhat awkward and uncomfortable operation. Mechanical shearers, in some measure, alleviated this; and we have now a mechanical shearer which is worked by the force of a spring, and the whole is so compact that it can be conveniently held in the hand, and the cutters working of themselves, all that the operator has to do is to guide it over the body of the animal, and the poor sheep is quickly deprived of his woolly coat.]

IRON PAVEMENNT—James Montgomery, of New York, N. Y.: I claim, First, A metallic pavement, consisting of a series of ribs or laminae in planes, parallel or nearly so, connected at alternate or varying levels by webs of metal, substantially as and for the purpose set forth.

Second, Constructing metallic paving-plates with ribs or arches of greater vertical depth in their intervening portion than at or near their sustained edges.

Third, The described combination of a concave or other suitable formed rail, E, with the projecting edge, a', and the paving-plate, A, and the under-lying edges of the plates, A, and A', for the purposes set forth.

Fourth, The described construction and application of the buttress-plate, B, in connection with the plate, A, and curb-stones, C, for the purpose explained.

Fifth. Connecting the edges of ribbed or arched paving-plates by tongue and grooved joints, as shown in figs. 9 to 13, or in any mechanically equivalent form.

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IRON PAVEMENT—James Montgomery, of New York. N. Y.: I claim a street paving, presenting on its upper surface a series of ribs corrugated or winding in a horizontal plane, substantially as and for the purposes set forth.

HARVESTERS—James Willard Patterson and Levi Hanford Colborn, of Baltimore, Md.: We claim the combination of the cutting-knife, b, the bar, e, and projections, o, upon the guards, i, arranged substantially in the manner and for the purposes described.

COOKING-STOVES—Richard Peterson, of Philadelphia, Pa.: I do not claim, broadly, introducing jets of air at the rear of the fire in cooking stoves, various devices for accomplishing this end having been heretofore used, but I claim the protecting-plate, H, with its perforations, m, when arranged in respect to the oven, the fire-place and the flues of an elevated oven cooking-stove, in the manner herein set forth, so that the products of combustion, after passing from the body of the fuel, and at the point where they impinge against and are dispersed by the said protecting-plate, prior to passing some over, and others under, the oven, may be met by and intermixed with jets of heated air for the purpose specified.

BEE-HIVES—William Powers, of Youngstown, Ohio: I do not claim, broadly, a bee-hive constructed with double walls, but I claim the cap or cover, C, of double walls, the inner one perforated as shown at e e, and the space between filled with charcoal, in the manner and for the purpose specified.

[The object of this invention is to construct a bee-hive in such a manner that it may be perfectly exposed and still an even temperature maintained within it, thereby avoiding the use of bee-houses or apiaries. The hive, also, by its construction, being self-ventilating, and favoring the work of the bees, both as regards the storing and preservation of honey, and the propogation of their species.]

CLEANING CASTINGS—Andrew Ralston, of Middletown, Pa.: I claim the combination of flexible pickers, brooms or brushes having a reciprocating, alternate, or oscillating movement, with an elevating and depressing table, the whole being arranged, combined and operated as described and for the purpose set forth.

HARVESTERS—Andrew Ralston, of West Middletown, Pa.: I claim, First, The arrangement of the receiving-apron, d, sheaf-trough, e, compressing hook, u, and levers, h i, and j, when used in connection with the horizontal and inclined gathering aprons, w', as described and for the purpose set forth.

Second, The use of the shocking-carriage, o, furnished with a shock-chamber, having a movable bottom in two parts, p and q, as described and for the purpose set forth.

PEN-WIPER AND PAPER WEIGHT—John L. Rowe, of New York, N. Y.: I claim the base or weight, A, with cup, j, attached, provided with the sponge, K, in connection with the pressure pad or sponge, i, connected with the base by means of the frame B, and arranged as shown and described, or in an equivalent way for the purpose set forth."

[To any of the ordinary paper-weights a cup or receptacle, in which a sponge or suitable absorbent is placed, is attached, and a frame in which the arbor of an absorbent pressure-pad is placed is fitted; the whole being arranged to form an excellent pen-wiper in connection with a paper-weight.]

ERASER AND PENCIL-SHARPENER—Archibald G. Shaver, of Hartford, Conn.: I claim the curved blade eraser with the circular edge pencil-sharpener, and the groove for finishing the pencil point, in combination, in the manner and for the purposes, substantially as set forth and described.

CRADLE-WAGON—George Smith, of Brooklyn, N. Y.: I claim as a new and improved article of manufacture, a cradle and wagon combined, when the several parts are constructed and operated substantially in the manner described

[A child's wagon is by this invention made to serve the extra purpose of cradle merely taking off the wheels and draft-pole, and turning out the four wings which are jointed to the ends of the rockers that are attached to the bottom of the wagon, the wings forming part of the rocker when turned out and giving the cradle increased stability.

COCKS FOR WATER-BASINS—Horace W. Smith, of Hartford, Conn.: I claim, the intermediate spindle, E, in combination with the vertical valve, H, in the manner and for the purpose substantially as set forth.

PROPELLER—Simon P. Snyder and George W. Cook, of Minneapolis, Minn.: We claim the arrangement and construction of a propeller, substantially as shown and described, also inclining the shaft of a propeller in relation to the boat in two directions as set forth. Also, the combination of a screw-thread on the propeller-shaft, with a screw-thread in the brace-plates forming the hub of the propeller, and with keys for the purpose of adjusting and fastening the wheel on the shaft, the whole being arranged as set forth.

ICE-PITCHER—James H. Stimpson, of Baltimore, Md.; I claim a double or treble-walled ice-pitcher, having its inside wall or shell composed of iron or other metal lined or coated internally with porcelain, as described, the same constituting a new article of manufacture.

[This improvement upon the well-known double and treble-walled ice-pitcher of Mr. Stimpson consists in making the inside wall of iron or other metal, coated with porcelain.]

COTTON-PRESSES—Uriah T. Stuart and Calvin E. Stewart, of Fayette County, Tenn.: We do not claim the invention of the rack-bar and pinion used in this invention, but we claim the combination of the rack and pinion with the rope and windlass for operating a press with two pressing-boxes constructed substantially as described.

MANUFACTURE OF SHOT—Charles B. Tatham, of Brooklyn, N. Y.: I claim the combination of the netting-pot, the regulating valve, the conductor, and the set pan, substantially as described, for dropping shot, as set forth,

LAMP-LIGHTERS—Leopold Thomas and Joseph Thomas, of Brooklyn, N. Y: We claim the arrangement of a trigger, I, or its equivalent in such a relation to a serrated sector, K, and to a ratchet-wheel, G, that by the motion of the trigger, a piece of fuse from a roller, D, is fed up and lit, substantially in the manner and for the purpose specified.

And we also claim the arrangement of a continuous fuse in combination with the lamp, substantially as and for the purpose set forth.

[This invention consists in feeding a band which winds on a roller underneath the lamp, (and which is prepared so that it takes fire by friction), up through a channel, and in such a position before the wick of the lamp that a short piece of this fuse, striking out over the top of the channel, is lighted by means of a serrated seetor, which is moved by the same trigger which serves to operate the feed-wheel, and that by so lighting this fuse, light is imparted to the lamp.]

BRICK-MACHINES—John Van Riswick, of Washington, D. C.: I do not claim the employment of two cams, and plungers, or the disk provided with molds, nor do I claim the hopper at or near the periphery of the disk for feeding tho clay immediately to the molds, as these devices are not new, but I claim the combination and arrangement of the carved or augular hopper, C, with the mold-disk, A, and vertically reciprocating plungers, D, whereby the upper plungers are caused to pass the hopper without lateral movement, in the manner and for the purposes specified.

GRAIN-CLEANING MACHINES—Hugh Wallace and William Mellon, of North Sewickly, Pa.: We are aware that cylinders, with shells or concaves, have been used before, for the purpose of pulverizing, rubbing or grinding substances, and wish it to be distinctly understood that we do not claim this.

But we claim the arrangement of the valve, b, ducts, D, and D.", and sieves, w and r, substantially as described and for the purpose set forth.

SEED PLANTERS—George Watt, of Richmond, Va.: I claim the series of angular faced rollers, arranged relative to their shaft, as described, for opening the furrows, in combination with the seed tubes and covers, substantially as specified.

WATER WHEELS—Chas. Wells, of Monroeton, and Wm. Douglas, of Bradford county, Pa.: We claim the combination of the scrolls, H, vertical buckets, E, and lower buckets, G, the whole constructed and arranged as described for the purpose set forth.

CHURN—L. J. Wicks, of Racine, Wis.: I claim the arrangement in a square churn, A, which is provided with a ventilating top, of the shaft, G, inclined arms, j j j j, cross-pieces, i i, and funnels, k k k k, the same being combined and operated in the manner and for the purpose specified.

APPARATUS FOR EVAPORATING FLUIDS—C. S. Wheeler, of Flowerfield, Mich.: I claim combining the evaporating pan, A, with the steam boilers, a a a, in such a manner as to cause the upper sides of said boilers to form highly efficient heating surfaces within said evaporating pan, substantially as set forth.

I also claim conducting the steam from the boilers, a a a, to the engine, which may be combined therewith, through the medium of a series of pipes, b b b C, d d d and e, which are so located that their peripheries form portions of the heating surface of the evaporating pan, but this I only claim when the said evaporating pan is combined with a series of steam boilers, substantially as set forth.

I also claim combining the spaces between the double bottoms of the clarifying pans, h h h, with the steam boilers, a a a, when the said pans and boilers are arranged with each other and with the evaporating pan, A, substantially as set forth.

I also claim the passing of the fluid to be reduced through a coil of pipe, l, located within the chimney or flue space before discharging the same with the clarifying pans, but this I only claim when the said clarifying pans are arranged with the evaporating pan, A, and the series of steam boilers, a a a, substantially as set forth.

BURNING FLUIDS—Wm. Wilber, of New York City: I claim a fluid compound for burning in lamps, &c., made of coal-tar, camphene, and alcohol, substantially in the proportions and manner set forth.

PLOWS—Solomon Williams, Jr., of Hume, N. Y.: I claim the arrangement of the adjustable wheel, G, with the land-side, D, of the plow, substantially as shown and described for the purposes set forth.

[The object of this invention is to render, by a very simple means, the draft of the plow as light as possible by diminishing the friction attending the passage of the landside and moldboard through the soil, and also by the same means regulating the plow, so that it will form furrows of greater or less depth as may be desired.]

FIREMENS' PROTECTOR—C. D. Woodruff, of Toledo, Ohio.: I claim the double walled sheet or plate metal house, D', and mounted on wheels B B, and provided with look-out holes d, and an adjustable plate e, to receive the nozzle or butt, g, the house being placed on rollers, i, in the platform and secured by buttons, j, or their equivalents the whole being arranged substantially as and for the purpose set forth.

Our firemen are often exposed to great danger, by the flames bursting out upon them while they are throwing water into a burning building, and they are often prevented getting as close to the fire as necessary by the heat. This invention is a fire-proof house on wheels, provided in front with a hole in a sliding plate through which the butt can be placed and the water directed to any spot. This can be placed close to the fire and the occupant will be protected from the heat and flames.

SEEDING MACHINE—E. O. Baxter, (assignor to himself, E. H. Riley, and W. T. Sweet,) of Forreston, Ills.: I claim first, The cam, n, one or more, attached to wheel, c, in combination with the jointed pendant, F, attached to the lever, E, substantially as and for the purpose set forth.

Second, The levers E E, connected together and arranged restively with each other and the driver's seat, I, substantially as and for the purpose specified.

[There are a certain class of seeding machines, the slides of which are operated from one of the wheels which the machine is mounted; this invention relates to one of them. The object of this invention is to prevent by a very simple means the operation of the seed slides as the machine is backed. The invention also has for its object the arrangement of seed slide levers in such a manner, that they may be placed under the complete control of the driver, and any irregularity as regards the dripping of the seed which might ensue on account of the irregularities of the ground prevented.]

ELECTRO-MAGNETIC MACHINES—W. H. Burnap and J. A. Bradshaw, (assignors to W. H. Burnap,) of Lowell, Mass.: We claim applying the oscilating balance wheel, D, with its shaft, j, in line with, but detached from a rock-shaft, g, or its equivalent, carrying an arm, f, which derives a positive oscillating movement from the train of gearing, which derives the magnetic-electric machine, and connecting the spring, k, which is attached to said balance wheel, with the so arranged moving arm, substantially as and for the purpose specified.

[This invention consists in a certain novel and very simple and effective mode of applying an oscillating balance wheel in combination with a train of gearing actuated by a spring for driving a magneto-electric machine, whereby the velocity, of the rotary motion of, and the strength of the current produced by the machine are rendered uniform or nearly so throughout the whole of the time the spring is running out.]

BURGLAR ALARM—R. M. Campbell, of East Cambridge, Mass, (assigner to W. G. Crombie,) of Boston, Mass.: I do not claim a percussion alarm, a gimlet or any such means of fastning the same to a door casing, but I claim, the application of the spring fastener G, to the alarm or its case, so as to be capable of sliding and turning with reference to the same, substantially in manner as specified.

ELECTRO-MAGNETIC FIRE ALARM APPARATUS—M. G. Farmer, of Salem, and W. F. Channing, (assignors to W. F. Channing, of Boston, Mass.: We claim the independent keys, D E F, with their pins, d e f, in combination with the rack, A, and a means of liberating the rack for the purpose set forth.

Second, We also claim the arrangement of the segments on the circuit wheel, in combination with the springs or their equivalent for throwing the electric corrent successively on to different circuits.

Third, We claim the double circuit, wheel or its equivalent for the purpose completing and interrupting an electric circuit at both ends, essentially as set forth.

TABLE CASTER—R. Gleason, Jr. (assignors to R. Gleason & Sons, of Dorchester, Mass.: I do not claim separately any of the parts shown and described, when separately considered, but I claim as a new and useful article of manufacture a caster, egg-stand and table bell, arranged and combined as shown and described.

[An egg stand, caster and bell are very prettily combined, so as to become an article of ornament as well as utility, and it can be used as a caster only or as a caster and egg stand; they are also placed on a support in such a way, that they are capable of revolving and the one foot serves for the three.]

EXTENSION TABLE—Thomas Gray, (assignor to himself and J. M. Sankey,) of Philadelphia.: I am aware that bars, so hinged together as to open and close, have been heretofore used in connection with extension tables, I do not therefore claim, broadly such device; but I claim, first, The method of constructing and of connecting together the two cross bars, H, and H', that is to say: constructing one bar, H, in two parts and connecting the two parts together by the two plates, e and e', which admit the bar, H', and afford a means of joining it to the bar, H', as set forth.

Second, The combination of the screw, I, block, G, bars, E, and F, and cross bars, H, and H', with the two ends of the table, the whole being arranged for joint action, substantially as and for the purpose set forth.

MACHINE FOR HEWING OUT HUBS—G. W. Miles, of Michigan City, Ind, and P. P. Lane, (assignors to Lane & Bodly, of Cincinnati, Ohio.: We claim, first, The described arrangement and combination of the axles, C C', stud shaft, I, and rotating rest, J, for hewing out cylindrical forms in the manner set forth.

Second, In combidation with the above the ways, D D, carriage, E, feed arm, F, pawls, G, and rack, H, arranged and operating together substantially as and for the purposes explained.

REGISTER FOR SHEETS OF PAPER—John North, of Middletown, Conn, (assignor to himself and D. Appleton & Co.,) of New York, N. Y.: I claim first, The attaching to the feed table of the printing press of two or more register points in addition to those commonly used for printing, so as to make register point holes in the sheet to be printed at the exact points required for the purpose of feeding the sheet in register to the folding machine to be folded.

Second, I claim the application for that purpose of the described mechanism, or other suitable mechanism of the same general description, attached to the feed table, frame and carriage of printing press, and which will produced the invented effect.

BEDSTEAD—Samuel McQuerns and William Lyon, of the District of Abbeville, S. C., Administator of the estate of B. M. Lyon, deceased.: We claim the use of the hinges in the middle of both the cross and longitudinal rails, in combination with the hinges between the rails and posts, substantially as and for the purposes specified.

RE-ISSUES.

HANDLES FOR TABLE CUTLERY—J. W. Gardner, of Shelburne Falls, Mass, Patented Feb 1st, 1859.: I claim forming the handle of two parts, a b, which are encompassed at their junction by a ferule, d, the tang, A, passing through both parts of the handle and the parts being secured thereon by a nut or washer, or a rivet, e', substantially as described.

[We noticed this invention on page 182, of this volume, SCIENTIFIC AMERICAN.]

DESIGN.

TABLE BELLS—H. C. Foote, of Wallingford, Conn.

We notice in the List of Claims of Patents issued this week, the number of TWENTY-SEVEN were applied for through the Scientific American Patent Agency.

INVENTIONS EXAMINED at the Patent Office, and advice given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by Editors of this Journal, through their Branch Office at Washington, for the small fee of $5. A sketch and description of the invention only are wanted to enable them to make the examination. Address MUNN & COMPANY,

No. 37 Park-row, New York.

Progress of Patents.

As an indication of the prosperous condition of the Patent Office and of the vast amount of business that is being daily transacted with that institution by our ingenious fellow-countrymen all over the Union, we may state that from the Scientific American Patent Agency alone, during the last two weeks, *ninety-two* models of new inventions have been shipped to the Patent Office. Some agents, who do but a small business, are in the habit of sending models to Washington by sailing-vessels, once a month. But it is the custom of this establishment to forward models to the Patent Office every Saturday, by express. Our clients, therefore, need not fear that any one case committed to our charge will ever remain unacted upon for want of promptness on our part.

RUMOR is busy as usual, under such circumstances, in selecting a successor to Mr. Holt, to fill the office of Commissioner of Patents. The names of Hon. James Hughes, ex-Member of Congress from Indiana; Hon. Edmund Burke, formerly Commissioner of Patents; Hon. C. L. White, ex-Member of Congress of Pennsylvania; and Samuel T. Shugert, Esq., the present efficient Chief Clerk of the Office, are suggested. No appointment, however, has yet been made.

Correction.

In the description of the lock invented by O. B. Thompson, of Hudson, Ohio, and published by us on page 216, of the present volume SCIENTIFIC AMERICAN, from a want of correspondence between the description and model furnished us, there were some mistakes made that we hasten to correct. What are called "bars" are stiff springs attached to the upper ends of the guards to prevent any injury of the different parts from pounding or forcing the sliders, *j*, whenever the guards, *g*, are held back by the bar, H, or plate, *b*. Instead of a spring bearing against the lower end of each guard, *g*, the bar, H, when raised by the eccentric bit, T, drives the guards, *g*, back, and the sliders, *j*, out, so that the plate, *b*, may fall in slots, *f*, and the pin strikes in notch, *c*, of tumbler, C, so that whenever the plate, *b*, rests on the tumblers, *f*, the bar, H, holds the guards back, and whenever the projection seen on the left of the eccentric boss, S, raises the plate, *b*, above the guards, the bar, H, holds the tumblers forward. The only acting spring in the lock is the one on the main tumbler, C. The bits of the key should not screw into the plate, *g*, but are headed on their inner ends, and may be easily permutated by turning the plate, F, about a pivot in its outer end.

The American Union—One Grand Fizzle.

Startle not, kind reader—we do not mean Uncle Sam's sisterhood of States, but an association of individuals in this city who got together last autumn, over the charred remains of the Crystal Palace, fulminated a cloud of wrath upon the American Institute, notwithstanding its venerable years, and finally started a sort of opposition industrial fair, in a twelve-story building up Broadway; and after consuming considerable gas, candy and peanuts, besides some fuel, (about which there is a little dispute, on legal technicalities, in the matter of payment,) and after sundry arrests and examinations before the Honorable Justice Welsh, the enterprise came to a grand fizzle on Friday night last, at the Cooper Institute, amidst cries, cheers, hisses, and bah, bahs!

A New Idea.

The Connecticut River Railroad Company are making experiments with a passenger-car, whose propelling power is a small engine stationed at the forward end. The car will seat forty passengers and the apartment alotted to their use is entirely separate from the engine room, and perfectly free from annoyance therefrom. It is considered as a desirable and economical acquisition for short distances.

The manufacturing interests are rapidly improving. Connecticut papers state that the factories at Waterbury, Ansonia, and Birmingham in that State, are working extra hours.

Literary Notices.

BLACKWOOD'S MAGAZINE—Published by Leonard, Scott & Co., No. 54 Gold street.—The present number of this able monthly contains a powerful leading article on Carlyle and his History of Frederick. "How we went to Skye," is a rattling literary performance, something in the old Christopher North style. The other articles, six in number, are, as usual, all good. "Old Maga" still maintains its high reputation among all its modern rivals.

THE BUILDER, AND THE PRACTICAL MECHANICS JOURNAL—Messrs. Wiley and Halstead, New York, Agents.—These foreign periodicals are held to be of great ability in their different departments. Those for January have been received, and contain a great amount of useful information to builders and mechanics.

THE ATLANTIC MONTHLY—Phillips, Sampson & Co., Boston.—The articles which compose the March number are excellent. "Holbein and the Dance of Death." and "A Plea for the Fijiians" being the best.

ANECDOTES OF LOVE. By Lola Montez—Dick and Fitzgerald, New York.—We did expect something new and fresh in a book with such a title and by such a lady, or at least the anecdotes would be well told, thought we. It is about as dull and stupid an affair as ever we looked at.

ETHEL'S LOVE-LIFE. By J. M. Sweat. Rudd and Carleton, New York.—This is a very interesting novel, the story, which is a good one, being told in a simple, earnest way.

THE HOUSE: A POCKET MANUAL OF RURAL ARCHITECTURE—Fowler & Wells, New York.—This is the last of "Rural Manuals," and like "The Garden," "The Farm," and the others, it is full of good, wholesome common sense observation and instruction We should advise every one who thinks of building either a house or hen-roost to buy the book, and they will there learn the best way of doing it.

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New Inventions.

Improved Wind-Wheel.

It is very curious to observe the impression which the same object will produce upon different minds; thus, for example, to a poetic mind the wind is a gentle zephyr or a hurrying blast, and always calls up a quotation from Falconer's "Shipwreck," or some other well-known poem; to the artistic the very feel of the wind, as it blows aside the garment or lazily fans the cheek, causes visions of sweet landscapes in which scattered leaves and waving grain are prominent and characteristic; while to the practical man it is a force of so many pounds to the square foot of surface which can be made available to drive machinery and save labor. The result of one of these latter's genius forms the subject of our illustration, which is a perspective view of the wind-wheel invented by A. L. Butterfield, of West Dummerston, Vt., and patented by him January 18, 1859.

A represents a vertical shaft which is fitted or placed in a proper framing. B and C represent four horizontal arms which are attached to the shaft, A, at its upper end, and to the end of each arm, C, a rectangular frame, D, is attached.

To the frames, D, the sails, E, are attached, one to each. These sails are formed each of two V-shaped boards or plates, *a a*, the edge of which at each side are connected by leather *b*, or any other suitable flexible substance or fabric. The back or narrow end of the upper plate of each sail is hinged to the corresponding end of the lower plate or board, and the leather or fabric, *b*, is allowed to be sufficiently full to enable the plates, *a a*, to be distended so that each sail will form a chamber to receive the wind. To the back part of each bottom plate, *a*, of the sails, an ordinary flap valve is attached.

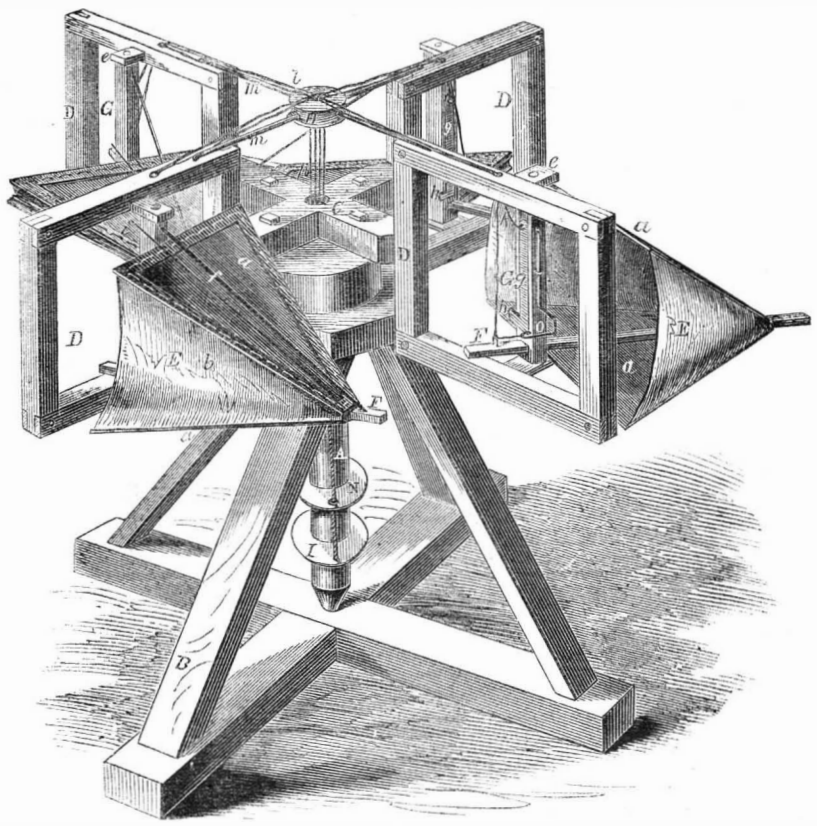
To the bottom plate, *a*, of each sail, a bar, F, is secured. The bars, F, pass entirely through the sails, and the front ends of the bars are secured to the lower ends of uprights, G, fitted in latter projections, *e*, attached to the frame, D, the journals of the uprights being allowed to turn freely in the projections, *e*. The sails, E, therefore, it will be seen, have a certain degree of lateral play allowed them, the object of which will be hereinafter shown. A rod, *f*, is attached to the back ends of each bar, E, and to the upper parts of the uprights, G.

In each upright, G, a slide, *g* is placed, which moves freely up and down in the uprights, and each slide has a small arm, *h*, projecting horizontally from it. To the upper plates, *a*, rods, *i*, are attached, one to each, said rods projecting from the fronts of the plates and passing through guides attached to the sides of the uprights, and resting on the arms, *h*. To the upper end of each slide, *g*, a cord or chain, *k*, is attached, and these cords pass upward through the upper parts of the frames, D, and are connected to cords or chains, *l*, which pass through a guide plate, A, which is secured to the ends of rods, *m*, that project from the upper end of the frames, D; the plate, H, being directly over the top of the shaft, A. The cords, *l*, pass down into the upper part of the shaft, A, and through holes in its side, and are attached to a ring or annular plate, *n*, which encompasses the shaft, A.

To each upright, C, a spring-catch, O, is attached. These catches are so arranged as to project over the front edges of the upper plate, *a*, when they are down or rest on the lower plates and the upper plates in such position. To each catch, *o*, a cord, *p*, is attached. The cords pass like *l*, to a ring, I.

The operation is as follows:—When the wind-wheel is at rest, the sails, E, are closed, that is to say, the upper and lower plates, *a a*, are quite close together, and the catches, *o*, project over the upper plates, *a*, and prevent the wind from raising them. When the wheel is to be operated, the attendant draws the chains or cords, *q q*, so as to reduce the catches, *o*. The cords or chains, *l*, are then also drawn down and secured down at a certain point, so as to raise the upper plates, *a*, above the lower parts of the catches, *o*, and thereby prevent the latter from passing over them. The wind will then rotate the wheel, each sail, as its mouth faces the wind, receiving the wind which distends it, the sails collapsing as their back ends face the wind. The sails, E, in consequence of being attached to the arms, *c*, as shown and described, are, by means of the lateral play or movement allowed them in the frames, D, enabled

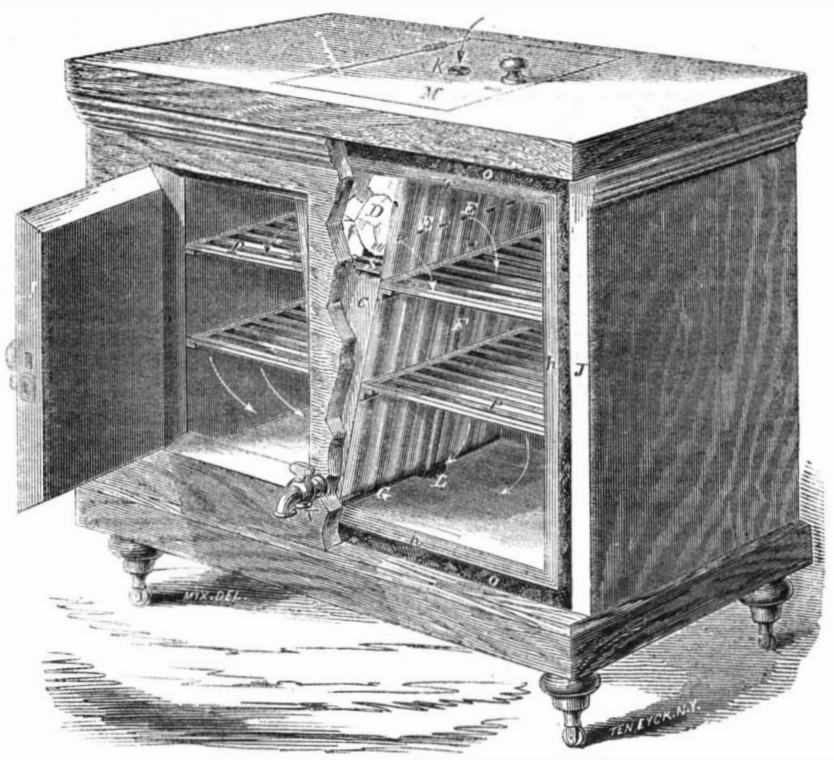
BUTTERFIELD'S WIND-WHEEL.



to adjust themselves properly to the wind, so that the latter will act against them at right angles. The upper plates, *a*, when the wheel is not to be rotated are allowed to descend, the cords, *l*, being lowered, and the stops, *o*, will again pass over the upper plates, *a*, and prevent them from rising. In case the wind has great velocity, the wheel is prevented from having two great a speed in consequence of the valves, *c*, opening, the springs yielding to the pressure and allowing a portion of the wind that enters the sail to escape.

This wheel is very convenient for the tops of buildings, and with it the farmer can always have a power that costs nothing, and ready to do his work. Those of our readers who wish for any further particulars can obtain them from the inventor by addressing him at Greenfield, Mass.

BARTLETT'S IMPROVED REFRIGERATOR.



Although the weather is not yet quite warm enough to require the plentiful use of ice, it will not be long before the burning rays of the summer sun will scorch us, and make all our food unpleasantly warm. It therefore behoves the careful housekeeper to see that the refrigerator is in proper order, or to buy a new one as soon as possible. We therefore present to our readers an engraving of one of the more recent that have been invented, which not only has the advantage of being novel, but also of fulfilling perfectly the purpose for which it is intended.

J is the outer casing of the refrigerator, and *h h* the inner, the space, *o o*, being filled with charcoal. The ice receptacle, C, is wedge-shaped, and the ice, D, is placed upon slats, S, in the upper part of it. The door, M, at the top of the ice receptacle, can be locked, so that in situations where ice is very expensive, it will be safe from thieves. F is the ice-water reservoir provided with a faucet V, to draw the water off as wanted, and any moisture from the chambers runs off through the groove, G, L, without coming in contact with the food. The receptacle, C, divides the refrigerator into two chambers, in each of which articles can be kept perfectly separate from each other, and a current of air entering the ice-chamber through the orifice *k*, in the door, M, and passing into the meat chambers through the orifices, E, and so gently down to the lower portion, L, thus keeping up perfect ventilation in the device. P are shelves for the support of articles, and T is a zinc lining for the inner casing. This is a very economic arrangement, using but little ice to produce continued cold; there is no drip, and all the frigerific properties of the ice-water as well as the ice are retained. G is a groove by which any moisture is carried away.

The inventor is A. H. Bartlett, of Spuyten-Duyvel, N. Y., and the invention was patented Nov. 23, 1858. Any further information may be obtained from the manufacturers, Bartlett & Lesley, 380 Broadway, New York.

Science of Steel Making.

There is certainly a very great difference between the qualities of cast iron and beautiful cast steel, and yet the difference between their compositions is but trifling. Cast iron and steel are compounds of iron and carbon; hard wrought iron contains of carbon 0·4 per cent; soft steel 0·5 per cent. Hard steel 2·4 per cent; common cast iron 2·5 per cent; and hard cast iron 5·0 per cent. From the composition of cast iron and steel, it is evident, that, if the former can be deprived of its surplus carbon, it will become steel. In England, the processes in use for doing this are first to decarbonize the cast iron, and reduce it to the condition of wrought iron, after which, it is again carbonized to that degree which renders it steel. This is certainly a very circuitous way of arriving at the result, nevertheless, it is the common mode. In Germany, on the other hand, steel is now made by taking away the surplus carbon from the cast iron, by a puddling process, and this appears to be by far the most scientific method.

It may be said, that there are several impurities in cast iron, such as silica and sulphur, which require to be removed, hence it is necessary to do this by the English method, in order to produce good steel. This is mere assertion without proof; for since steel has recently been made in Germany by the short process, there is no reason why the longer one should be followed anywhere. This is a subject of great importance to our iron manufacturers, because, cheap cast steel is a great desideratum. It is nearly three times stronger than wrought iron, and being of a uniform texture, it wears more uniformly, hence it is the best material for machinery, and could it only be produced as cheap, it would be universally used in preference.

A New Propeller.

A new method of propelling boats has been invented by J. Buchanan, Greenock, and is illustrated in the Glasgow *Practical Mechanics' Journal*. It consists in the application of oars which are operated by a peculiar mechanism, to give them the same action as a sculling blade. These propellers project below the keel of the vessel and are very compact, but at the same time apparently inferior to the rotary screw. The tail of a fish is the most simple propeller in the world, and a sculling oar, if its blade were made of thin steel, so as to assume the screw form in moving, would be the exact counterpart. It is intended that this sculling propeller of Mr. Buchanan shall be applied in deep sea fisheries, and be worked by hand, for which purposes it is in a certain degree applicable, and may also be used by American mackerel fishermen.

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Scientific American.

NEW YORK, MARCH 19, 1859.

REMOVAL.

The SCIENTIFIC AMERICAN *Office has removed from its old location,* 128 *Fulton st. (Sun Building), to No. 37 Park Row (Park Building), where all letters, packages, and models should hereafter be addressed. Entrance is had to the office also at No.* 145 *Nassau st. Munn & Co.'s American and European Patent Agency is at the above office.*

Commissioner Holt appointed Postmaster-General.

One of the advantages of a government—right and true in theory—is, that it is perpetual, and no hiatus can exist in the administration of its affairs, for as one official is removed, in the natural rotation of office, or by the hand of the Grim Conqueror, there should be always ready a qualified and able successor. Such is now the case with us. The office of Postmaster-General having been rendered vacant by the death of the Hon. A. V. Brown, the President has appointed the Hon. Joseph Holt, so well known to our readers as Commissioner of Patents, to take this important place in his Cabinet. Whatever difference of opinion may be entertained of the Federal Head, through the bitterness of party strife, this appointment will be endorsed by every one who is at all acquainted with the new incumbent.

Mr. Holt is a gentleman possessed of as much common sense, capability of administrative work, and clear and unprejudiced judgment, as any one to be found within the charmed circle around the White House. He is son-in-law of ex-Postmaster General Wickliffe, and brother-in-law of Senator Yulee, of Florida, and is a sound lawyer, an elegant writer. and all his reports and decisions have been specimens of good diction, and have breathed forth an interest in the true and progressive welfare of our country, which fact is both pleasing and unique.

In his official position, we have had frequent intercourse with him, and have ever found him alive to the duties of his office; eminently just and rigid in the discharge of his duty, yet ever showing a genuine sympathy for the inventor, so that, while his decisions might disappoint the expectation of the claimants, the grace exhibited in the discharge of this duty would conquer vexation, and disarm prejudice.

In common with all who have had business with the Patent Office, we regret this change, and no class of our citizens will regret it more than the great body of inventors. These regrets, however, are overcome in a measure by the fact of Mr. Holt's appointment to a more distinguished position under the government. If, as Postmaster-General, Mr. Holt is as diligent and single-minded, and exercises his judgment with the same fidelity, as in his former position, he will prove a most valuable member of the Cabinet. Mr. Holt is a thoroughly honest and capable man, and if the Contractors get the best of Uncle Sam in his department, they must be exceedingly industrious and persevering.

Machinery and Labor.

While the Homestead bill was recently under discussion in the House of Representatives, Mr. Leiter, of Ohio, delivered a speech in its favor, which has been characterized by some of our cotemporaries as one of great ability. We decidedly differ in opinion with those who have regarded his effort with any degree of admiration. Arguments founded on false statistics, however plausible they may appear, are like houses built upon quicksands—unreliable and dangerous. Such we conceive the rhetorical structure which Mr. Leiter built up for this bill; not that we oppose its objects, but the ridiculous arguments advanced to promote them. These arguments are founded on the erroneous idea that machinery has been exceedingly injurious to the laboring and mechanical classes, and that its extension has reduced them from comparative independence and comfort to penury and suffering. This orator says:—"Within the last fifty years steam power and labor-saving machinery have wrought a mighty revolution in industry, and rendered almost superfluous manual labor in the great department of mechanical industry. In the British Islands the work done by machine power is computed by Lord Brougham to be equal to the labor of eight hundred millions of men; while it has made the nation the wealthiest and most powerful on the globe, it, with monopoly of the soil, has reduced the mass of her *people* to abject misery."

The achievements of machinery, as set forth, are rather under than over-rated, but the concluding part of the paragraph is not entitled to the least confidence. Instead of machinery having tended to reduce the mass of the people of the British Isles to misery, it has elevated and improved their condition, and at the present moment their circumstances are far superior, in every respect, to what they were at any other period of their history. Instead of reducing them to abject misery, it has elevated the laboring classes from the condition of being "yoked with the brutes and fettered to the soil," to the position of intelligent beings, and made them a great power in the commonwealth. That man is profoundly ignorant of the history of England who teaches such doctrines as the above. The complaints urged against machinery are like those of a moping owl complaining to the moon. Watt, Arkwright and other inventors of machinery have done more for the people of England than all the wisdom of Bacon or the discoveries of Newton; and yet, according to Mr. Leiter, the steam-engine, the spinning-jenny, the power-loom, and the printing-press have been curses not blessings to the Ecuador classes. Such sentiments as those expressed above might well be expected from a denizen of the forests of Ecuador, not from a citizen of this free and enlightened republic. But he does not stop in his charges against machinery as applied to England; he carries the imputation home to our own country. He also says:—"The effect of machinery upon the prosperity of the industrial classes is beginning to be felt in this country as well as in Europe. Until the steam-engine took the place of human muscles in the production of wealth, scarcity and want had not been known in this country. But how is it now? Whenever the operations of manufacture cease, the laborers are thrown out of employment, and wide-spread misery follows."

Never were statements uttered in or out of Congress more untrustworthy than these. It is distinctly stated that machinery, and the steam-engine especially, has caused scarcity and want in our country. When it is recollected that machinery has wonderfully increased the products of labor, and that it neither eats human food nor wears clothing, it appears to be one of the most stupid conceptions possible, to charge it with causing *scarcity* and *want.* As every implement above the teeth and nails is a machine, the above extracts furnish a brilliant panegyric upon the logic and intelligence of some Congressional representatives. In order to bring about the good old times when Adam delved and Eve span and to prevent scarcity and want, we must go back upon human muscle, cease manufacturing operations, and throw all our steam-engines into the ocean! Such are the derivable conclusions from the above; they are far from being creditable to any American citizen.

By the most recent news received from Europe, we learn that a large force is engaged on the *Great Eastern* steamer, and it is positively asserted that she will be able to make her first trip to Portland, Me., in the month of August next.

Decoration for Houses.

The civilizing, softening influence of art is acknowledged by all who have studied their fellow-man's moral and mental development, and the accumulation of objects of interest and beauty in a house tends to knit more closely the bonds of family affection, and changes the four walls from a cold dwelling-place into a sacred and holy home. All the feelings which spring up in every true man's or woman's breast at the utterance of that word, *home*, are feelings of association, and not of mere locality, and hence wherever we go, and at every stage of our lives, if the associations are pleasant ones, we look back with glowing emotion on the home of our childhood, and to the one we have ourselves created. Dryden beautifully says:—

"Home is the sacred refuge of our life."

And it should be our endeavor to decorate this place, of all others, with lovely objects, and nature's beauties or simple works of art. Unfortunately, there are many that cannot afford to buy these decorations, who still have all the desire to possess them and the taste to appreciate; therefore, we will tell our readers how some very beautiful and interesting objects of art and nature may be made at little or no expense.

Green is a color that is ever suggestive of pleasure, and it is stimulating to the eye, and Nature's own tints may be obtained at any season of the year, combined with graceful vegetable forms, by either of the following ways:—Take a carrot, and having cut off the green, cut about the thickness of a cent off the top, let this float on a saucer of water in a warm room, and it will quickly begin to sprout, presenting an object of beauty not excelled by any artist, because it is the work of the laws established by the Grand Artificer of the universe. Another beautiful decoration may be made from a pine cone. One should be procured that is dried and opened, and the different circles should have grass seed or mustard and cress sprinkled in them, and then placed in a wine-glass of water; in a few days the warmth and moisture will give the burr or cone life, and the circles will close upon the seed, which, in its turn, shortly germinates, and, sprouting out all over the burr, makes an harmonious contrast of color between the lively green and sombre brown that has a truly pleasing and novel effect, actually refreshing all who look upon it.

The growing acorn is a very pretty and interesting object to study, and an ornament that teaches while it gives delight. It is thus prepared: Cut a circular piece of card to fit the top of a hyacinth-glass, so as to rest upon the ledge and exclude the air. Pierce a hole through the center of the card, and pass through it a strong thread, having a small piece of wood tied to one end, which resting transversely on the card, prevents its being drawn through. To the other end of the thread attach an acorn; and having half-filled the glass with water suspend the acorn a short distance from the surface. The glass must be kept in a warm room; and in a few days the vapor from the water will hang from the acorn in a large drop. Shortly afterwards the acorn will burst, the root will protrude, and thrust itself into the water, and in a few days more the stem will shoot out at the other end, and, rising upwards, will press against the card, in which an orifice must be made to allow it to pass through. From this stem small leaves will soon be observed to sprout, and in a few weeks there will be a handsome, though dwarf, oak plant.

The forms of crystals are very educative, in an artistic sense, their cold and distinct outlines cultivating an acquaintance with geometric forms, and they are capable of combinations that produce a broad and rugged effect. Alum is a good substance to crystallize. A piece of wire may be taken and bent to form any object that fancy may dictate, and then placed in a hot saturated solution of alum, which as it cools will deposit crystals upon the wire, thus producing a crystal ornament of great beauty. These crystals are translucent, but may be colored to suit the fancy by the addition of coloring matter, tumeric making them yellow; litmus, red; logwood, purple; and common writing ink, black. A piece of coke may be made to assume the appearance of a new mineral by placing it in an alum solution, as the crystals will avoid the smooth portions, and deposit themselves only on the rough and broken parts. Sulphate of copper or blue vitriol may be substituted for alum, but this is a positive blue, and the color cannot be changed.

We think we have for the present given a sufficient number of hints how each home may be made cheaply into a place of ornament as well as necessity, and these little things scattered about the rooms of a house decorate and soften the asperities of papered walls and rigid furniture, adding a look of comfort and a feeling of repose that is the very concentration of true home life. As a people, we neglect *taste* in the surroundings of our lives, which should be cultivated; and such little things as we have been describing are important aids, and help the man, the woman and the child to better appreciate the truth of that line of Keats'—

"A thing of beauty is a joy forever."

Weights and Measures.

Although a radical reform is urgently demanded in our harlequin systems of weights and measures—subjects which belong entirely to the Federal government—yet Congress is generally too much employed in the mean and petty pursuits of party and pelf to give them that attention which their importance would warrant. This is the reason why session after session passes away, and nothing is effectually done to meet the case. We had thought that the Congress which has just adjourned would have done something to remedy the defects in our Patent laws, and those connected with this question, but its time was too much occupied with investigations regarding the corruptions of office-holders and others, and in contests for party spoils. Good measures and noble objects were "laid upon the table" to make way for those of the most greedy and selfish purposes.

We sometimes give Uncle John Bull a thrust under the ribs for his conservative tendencies, but of late years he has far surpassed us in political progress, commercial and social reforms. He has driven our steamships from the Atlantic Ocean, and we think he will distance us shortly in weight and measure reforms. At a meeting recently held at the Corn Exchange, Liverpool, by the merchants of that city, resolutions were adopted sanctioning a uniform system of weight for grain, flour and meal of all kinds; and there can be no doubt but Parliament will soon give the subject the attention which it deserves, because the policy which the British government has pursued for the past twenty years, has been to adopt every measure which the people want, when competent testimony is elicited to show that it would be for their benefit. Such a measure is admitted to be necessary and would be beneficial, and we doubt not it will soon be carried out.

It is well that the prosperity of our country does not depend on its politicians, or it would soon sink into the miserable condition of the republics of South America.

Gallant Act of an Engineer.

On the night of the 22nd ult., as a passenger train was passing along the New Albany & Salem railway, near Linden, Indiana, the engineer perceived a human figure ahead, and instantly blew his whistle and shut down the brakes. The figure continued on the track, and the engineer finding it impossible to check the speed of the train, went out upon the cow-catcher and grasped the man, as it proved to be, lifting him on to the cowcatcher unhurt. He was a deaf mute and the gratitude of the poor fellow, when he saw the danger from which the bravery of the engineer had rescued him, was fully displayed by the most exciting gestures.

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The Glass of Venice.

It may appear strange, but it is true, that with all our improvements and inventions our ancestors did certain things that far surpassed anything we can produce in the same way, and in fact, our modern novelties are often but the result of searches after lost arts and dead knowledge. Thus is it with the glass manufactures of "the bride of the sea," artistic Venice. Although her wondrous story seems one of fable, and the Doge with his retainers has now forever passed away, yet, in the public museums of art and in the cabinets of connoisseurs (which being freely translated means "knowing gentlemen"), there are to be seen evidences of her industrial art and her workmen's skill. In very early times her glass manufactures were celebrated; and when in the thirteenth century, the Venetian republic aided in taking Constantinople, she made good use of the conquest by learning secrets from Eastern nations concerning the manufacture of colored glasses and enamels. At the commencement of the sixteenth century, the filagree glass-work was introduced on the island of Murano, where the furnaces were placed, and a goblet of this manufacture has been bid $1,000 for. This filagree work, though well understood by our manufacturers, is seldom made, for, from some cause, the delicacy of the Venetian tints and threads seem to be again unattainable. It was produced by making thin rods of glass by imbedding strings of colored glass or opaque white glass in colorless glass, and these thin rods were heated, and then blown, twisted, and welded, and then molded into goblets, vases and jugs. The effect is very pretty and unique, the stem and thick parts presenting a mass of varied colors which gradually thin and spread out into the form of the vessel, which seems to be made up of a series of colored curves that harmonize with the design of the goblet. It is an exceedingly elegant manufacture, and might, we should think, be advantageously revived in another republic whose flag is composed of stars and stripes.

The Pacific Gulf Stream.

The coasts of Western America in Oregon and Vancouver's Island have a climate very similar to that which prevails in western Europe in the same latitudes, and owing to similar causes; that is, it is much warmer in the winter season than regions situated several degrees further south. The cause of this is a warm ocean current which has its origin in the tropics and sets in towards the north-east in the Pacific, and towards the north-east in the Atlantic. The Pacific warm current is stated by a recent writer in *Blackwood's Magazine* to have its origin, for a certainty, in the China Sea, and that it has been traced across to Behring's Straits by sea-weed from Borneo. This ocean current flows along the coast of Japan and is the source of fearful storms, similar to the cyclones of the Atlantic and the hurricanes of the West Indies. Sailors dislike to navigate along the Chinese and Japanese coasts, on account of these gales, as they are frequent and very violent. This current moves with the velocity of two and a half miles per hour, and if fraught with storms for the sailor, it brings warm winter breezes and fruitful showers to coasts that would otherwise be blocked up with ice, and lands that would be buried in snow eight months out of the twelve. "Every bitter has its sweet, and every poison its antidote."

A Primitive Method of Measuring Time.

Certain people of the East measure time by the length of their shadows. If you ask a man what o'clock it is, he goes into the sunshine, stands erect, then, looking where his shadow terminates, he measures its length with his feet, and tells you nearly the time.

The New Orleans *Delta* estimates the sugar crop of Louisiana for the past year to be 326,482 hogsheads, of which 144,861 have yet to be forwarded. Louisiana is a great State for "sweetening" the cup of life.

An Interesting Report on Milk.

We attended the regular meeting of the New York Academy of Medicine last week, and listened with much gratification to an elaborate and philosophical investigation on "Swill Milk," by Dr. Samuel R. Percy (our good friend Dr. Samuel P. Rotten, who stated in a short introductory that he had taken the proper legal steps to regain his family name). The report was in answer to a request from the Mayor, that the Academy of Medicine would appoint a Committee of Investigation on this subject. Dr. Percy occupied more than two hours in reading his report, and it was listened to with marked attention and warmly applauded. The eloquent old historian of New York, Dr. J. W. Francis, spoke most highly of the industry and perseverance shown by Dr. Percy, and expressed the gratification he felt at the document he had just heard. He said: "It showed philosophical investigation and deep inquiry, and corresponded with the learning of the times, and the spirit of the age. He thought that upon the present occasion their Academy had signalized itself, and that the document just read would add largely to its renown. It was worthy of learned Europe, and was pregnant of mighty results as affecting the subject of sanitary laws."

We present this week a series of analysis from the report, and we purpose, as opportunity permits, to make further extracts and comments. This report should be printed, and placed in the hands of the public.

ANALYSIS OF COW'S MILK.

	Water.	*Solid Matter.*		*Butter.*	*Sugar.*	*Casein.*	*Saline Matter.*
Milk analysed by Poggaile	862.8	137.2	viz.,	43.8	52.7	38.0	2.7
Milk from Mr. Suydam's cow, kept for family use	852.60	147.40	(Doremus)	44.00	39.70	57.10	6.60
Milk from swill-fed cows, kept at 16th street distillery	858.60	141.40	"	44.20	17.90	70.80	8.50
Milk from one of the fattest cows in the same place	858.0	142.0	(Percy)	44.0	18.0	66.0	14.0
Milk from a grass-fed cow in Westchester county	868.0	132.0	"	44.0	46.0	39.0	3.0
Milk from 4 cows, kept at the Williamsburg distillery	870.0	130.0	"	35.0	15.0	68.0	12.0
Milk from the same, obtained from the man while delivering to customers	924.0	76.0	"	19.0	10.0	36.0	11.0
Milk from the same, taken from large cooling cans immediately after milking	869.0	131.0	"	31.0	17.0	70.0	13.0
Milk from a dealer (Decker) in E. 27th street, obtained while delivering	856.0	144.0	"	47.0	48.0	43.0	6.0
Milk taken from a sick cow in Williamsburg distillery	877.0	123.0	"	19.0	13.0	74.0	17.0
Milk from 16th and 10th streets distilleries, milked in presence of analyst (4 cows)	867.0	133.0	"	34.0	18.0	69.0	12.0
Milk from the same, obtained from the man while delivering to his customers	923.0	77.0	"	20.0	10.0	37.0	10.0
Milk from D. Baldwin, dealer, obtained while delivering	869.0	131.0	"	38.0	34.0	52.0	7.0
Milk from J. Willets, dealer, obtained after delivery to a customer	860.0	140.0	"	47.0	46.0	41.0	6.0
Milk from 6 Alderney cows, J. T. Norton, Farmington, Ct.	829.0	171.0	"	72.0	47.0	47.0	5.0
Gail Borden's condensed milk.	578.0	422.0	"	124.0	157.0	131.0	10.0

ANALYSIS OF CREAM.

J. T. Norton, Farmington, Ct.	364.0	636.0	(Percy)	568.0	28.0	38.0	2.0
Husted's Distillery	494.0	506.0	"	311.0	19.0	165.0	11.0
Gail Borden	490.0	510.0	"	424.0	38.0	42.0	6.0

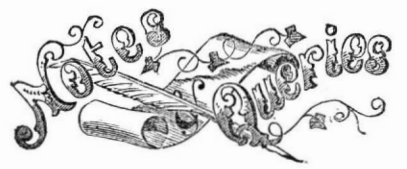
ANALYSIS OF WOMAN'S MILK.

A lady suffering with ague in the left breast.—From the right breast (healthy) alk.	896.0	104.0	(Percy)	22.0	61.0	19.0	2.0
From the left breast (ague) milk, acid	918.0	82.0	"	10.0	24.0	41.0	7.0
From both breasts of a drunken woman—acid	920.0	80.0	"	11.0	22.0	39.0	8.0
From both breasts of a healthy woman—alkaline.	892.0	108.0	"	26.0	60.0	20.0	2.0
From M. R. S., (baby starving), milk alkaline	927.0	73.0	"	9.0	22.0	41.0	1.0

Desulphurizing Coke.

Iron made from wood charcoal is superior to that made from mineral coal, because it contains less of those impurities which exercise an injurious effect, by combining with the iron in the smelting process. Sulphur is more injurious to iron than any other substance usually associated with it, a very small percentage rendering the metal what is called *red-short*. In those parts of our country where bituminous coals are employed in the smelting of iron, these are first converted into coke, and as they generally contain a considerable amount of pyrites, they exert a deleterious action upon the product. We have received letters frequently in regard to this evil, more especially in relation to the pig iron made from coals coked in ovens. Coke, which contains more than one and a half per cent of sulphur is unfit for making good iron, and most of our coke contains as much as this. How shall it be removed is the important question? One of the cheapest agents for this purpose is moisture; as the sulphur left in coke is in the form of a protosulphide of iron, with which, when moisture is brought into contact at a high heat, the oxygen unites with the metal, and the sulphur with the hydrogen then passes off in the form of sulphureted hydrogen. This is the offensive smell which we experience when water is thrown upon hot coal ashes. Coals baked by the old method of pits in the ground, make a superior coke for iron smelting, but the reason why is known only to a limited number of persons. Overman, in his treatise, has set forth the cause, namely, the moisture absorbed from the ground. This unites with the sulphur in the coal, and carries it off in the form of gas. By admitting jets of steam into coke ovens, a similar result is effected. This method has recently been adopted in England by Messrs. Carlidge & Roper, who use coke ovens with perforated floors, through which steam can be admitted in minute jets, and shut off at pleasure. The celebrated Low Moor English iron is made from coke containing no sulphur; when the same ore from which it is made was smelted with inferior coke, it produced a very inferior iron. This is a subject of great importance to our iron manufacturers who use coal containing pyrites.

The African expedition under Dr. Livingston, by the last accounts, was proceeding up the Zambesi river, and had dug some very good coal on its banks for their steamboat, which coal is well adapted for raising steam.



*** Persons who write to us, expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their communications.

We are unable to supply several numbers of this volume; therefore, when our subscribers order missing numbers and do not receive them promptly, they may reasonably conclude that we cannot supply them.

A, L., of Pa.—There are a number of existing patents on horse-shoe nail machines. Send us a sketch and description of your machine for examination. We hope your friends will send in their subscriptions without delay.

J. S. E., of Ohio.—You can improve upon any patent, in any respect that you choose. You cannot make use of another's patent without the owner's consent, even if you have improved upon it. In regard to penalty, the law allows the court to double the amount assessed by the jury.

R. S. P., of Pa.—Your method of making carpeting is new to us, so far as we can understand it. Send us a full account of the process.

S. R. J., of Pa.—We have forwarded your letter to the Ansonia Clock Company, Ansonia, Conn. It will cost about $15 to have your invention engraved for publishing in the Sci. Am. This is your best plan to adopt.

F. W. R., of Texas.—You can procure a crane, with hoisting apparatus, from the Novelty Iron Works of this city.

M. P., of Me.—We never gave directions how to make French brandy, but we described the method employed to make the adulterated stuff which goes by that name, to let the people know how they are imposed upon. The camphorated storm glass is very reliable, and may be either half an inch or an inch in diameter, and about a foot long.

J. L. G., of S. C.—Magnetic shoe-soles have never been used by tinsmiths to prevent them from slipping on roofs. We do not believe they would effect such an object, as magnets may be easily drawn across the face of metal, although not easily lifted or pulled from it.

J. R. C., of Ohio.—Your best way to obtain the Reports of the Commissioner of Patents is to apply to the Representative in Congress from your district. Burned steel must be carbonized again to restore it to its former quality. To case-harden polished iron, cover it with a paste made of flour and the prussiate of potash and allow it to dry, then heat it in the fire till red-hot, and plunge into cold water.

E. H., of Cal.—It will take 2½ horse-power to force water at the rate of one inch per minute through a half-inch tube laid through the Atlantic 3,000 miles. This supposes the water in the tube to be in equilibro before motion is given to it. In sinking such a tube, however, it would be squeezed as flat as a pan-cake.

E. S., of Pa.—We do not consider that there is any loss by the use of a crank in a steam-engine, except a small amount of friction on the crank-pin, and that of the connecting rod.

F. F. C., of Ga.—You can pack a bale of cotton with one-horse power, or with a man power according to the time that is taken in doing the work. Where the packing is done by hydraulic presses in this city, and steam power used, five and ten-horse power is applied, but the work is done five and ten times faster than with one-horse power.

T. S., of Mich.—Your system of musical notation is not quite like Mr. Mahoney's. The music for the blind which he embosses more resembles yours, and that was invented by him in 1847, and copyrighted in 1854. A specimen was published in "The Musical World" of that year, the piece being "What Fairy-like Music!"

H. W. G., of Mass.—If this earth at one period, very remote, was a glowing mass of fire, as is commonly taught by the majority of geologists, and all the grades of equatorial life first existed at the poles, as you suggest, because the earth first became cool in these regions, then upon the same principle of reasoning, it all must become like a "frozen turnip" at some remote future period.

H. D. S., of N. Y.—To dye feathers a bright scarlet color for fishing purposes, they must be first washed in soap-suds to remove all the grease, then boiled for half an hour in a clean tin or brass vessel with some ground cochineal, alum, tartar, and a little quercitron bark. Half an ounce of ground cochineal, the same amount of cream of tartar and alum in a gallon of water will color one-fourth of a pound of white feathers a beautiful scarlet. The best way to silverize brass is by an electric battery, and the use of the cyanide of silver in solution. The best mode of dishing fishing spoons is by a die and severe pressure.

M. M., of R. I.—No person can make, sell, or use a patented machine without being liable to the patentee for damages. Those who informed you to the contrary do not understand our Patent laws.

A. S., of N. C.—There are quite a number of companies that manufacture coal oil in different parts of our country. They all understand how to render it pure in color, but not how to remove the offensive odor.

J. O. M., of N. Y.—Wood is a very excellent conductor of sound; it is far superior to many of the metals for this purpose.

R. C. N., of N. Y.—Your links of an electric conductor connected to the pitman of an engine would not afford an economical power, nor be of the least practical benefit.

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J. R. M'C., of Mo.—Degrees of latitude and longitude vary in length; the former variation is trifling, that of the latter varies from 365 152 feet at the equator to zero at the poles. You will find tables of the length of degrees in all good works on geography.

J. H., of N. Y.—Our terms for advertising are 25 cents per line for each insertion, and that you may be able to know exactly how much your advertisement would cost, you can reckon eight words to the line.

C A. B, of Washington City.—It is a settled principle in our patent system that an invention for which a patent is sought, must be new at the time the application is made, else it cannot be considered patentable. That mistakes are sometimes made by the Office in the issuing of patents no one will pretend to deny, but they are very rare cases, which fact is alike creditable to the skill and efficiency of the examining corps. In reference to Martin's patent for boiler improvements, we have never had occasion to examine carefully into its novelty, but if the facts are as you state them, the patent is not worth a copper. In our extended intercourse with the Patent Office we are not prepared to make any charge of favoritism. The claims of one inventor stand just as well as another before the Office.

J. H., of Ohio.—We hope your anticipated improvement in sewing-machines may be fully realized. Ingenuity needs to be directed towards a more simple and less expensive machine—one within the reach of all families. Send us a sketch of yours for examination.

QUERY.—A correspondent asks if its true that a ship was once built in New York, commenced on Friday, finished on Friday, named on Friday, sailed on Friday, and never heard of after leaving the port. We have heard that the above circumstances actually occurred to the vessel of a ship-builder in this city, who determined to cure sailors of their old whim about "unlucky Friday." We do not believe it, the same story being told of every seaboard town, but it may be that some of our readers can throw some light upon this subject.

M. H. R., of Tenn.—We are unable to give you the address of any one engaged in the boring of artesian wells.

T. of Mass., and B., of Del.—We cannot recall the name of the person who wrote to us suggesting improvements for the use of sugar-planters. He did not, however, authorize us to give his address to any one.

F. A. F., of Wis.—Good common black-ink may be made by dissolving one pound of the extract of logwood in a gallon of water, and adding an ounce of the bichromate of potash. Bottle it and shake well for four or five days. Red ink is made by boiling a pound of red sanders in a gallon of water for an hour, pouring off the clear, and adding a little dissolved alum, or what is better, about a tablespoonful of the chloride of tin. Blue ink is made by grinding Prussian blue in water, then adding a little oxalic acid. A small portion of gum-arabic should be added to each of these inks.

Money received at the Scientific American Office on account of Patent Office business, for the week ending Saturday, March 12, 1859:—

J. T., of N. Y., $30; S. W. & R. M. D., of Mass., $25; S. L. B., of S. C., $25; J. C. S., of Mass., $35; N. P. S., of N. H., $30: T. & T., of N. Y., $55; H. T. S., of R. I., $25; S. & G., of N. Y., $30; W. H. & G. Y., of N. Y., $25; S. & W., of Texas, $20; B. & B., of Ill., $55; M. & C., of N. Y., $45; N. B. G., of N. Y., $30; G. U. B., of N. Y., $55; S. R. H., of Mich., $25; N. D., of N. J., $50; H. W. H., of Ill., $25; T. F. W., of La., $85; W. J. B., of Pa., $30; R. P. & L., of Ind., $50; J. McC., of N. J., $30; A. W., of N. Y., $50; J. C. S., of Miss., $55; M. C., of N. Y., $25; C. & H., of Mass., $30; B. R. Jr, of Maine, $30; J. S., of N. Y., $30: E. B., of Md., $30; J. W. R., of Mo., $25; J. W. A., of Wis., $25; O. M. P., of Ill., $25; J. S., of Ind., $30; M. D., of Mass., $100; N. B., of Iowa, $30; H. H. of Pa., $30; W. C., of Pa., $47; L. & G., of Ohio, $25; J. S., of N. Y., $32; F. M., of N. Y., $25; H. B., of R. I., $30; J. S. S., of Ind., $35; H. C. S., of Ohio., $150; E. P. T., of N. J., $25; T. B., of N. Y., $20; P. A. S., of N. Y., $55; H. H. & W., of N. Y., $30; R. J. H., of Ohio, $10; C. P. G., of Ill., $30. J. P. C., of N. Y., $60; J. F. & E. P. M., of Mass., $25; H. O. A., of La., $50; L. S. W., of Ct., $30; J. A., of Mass., $100; L. & M., of N. J., $30; F. Bros., of Md., $250; H. H. E., of Ohio, $40; C. B. C., of R. I., $30; H. L., of Mass., $30; L. R., of Mass., $55; L. & P., of N. Y., $25; B. P., of Ind., $25; J. N., of N. J., $55; J. M. H., of Ill., $30; W. B., of Ga., $30, J. A., of N. Y., $30; T. R., of N. Y., $100; E. P. N., of N. Y., $60; L. A. B., of N. Y., $20; J. L. W., of N. Y., $30. H. G., of Ohio, $55.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, March 12, 1859:—

H. H. & W. of N. Y.; S. L. B. of S. C.; J. W. A., of Wis.; J. T. of N. Y.; M. C. of N. Y.; H. L. of N. Y.; J. R. C. of N. J. (4 cases); S. W. & R. M. D., of Mass.; L. S. W. of Ct.; H. H. E. of Ohio; M. & C. of N. Y.; H. T. S. of R. I.; E B. of Md.; O. M. P. of Ill.; J. R. of Ohio; J. C. S. of Mass., W. H. & G. Y. of N. Y.; F. G. of N. Y.; L. & G. of Ohio; T. B. of N. Y.; S. R. H. of Mich.; B. P., of Ind.; N. D. of N. J. (2 cases); F. M. of N. Y.; K. F. of Wis.; H. W. H., of Ill.; T. H. of N. J.; T. F. W. of La.; A. E. D., of Paris; E. P. N. of N. Y.; J. C. S. of Miss.; P. A. S. of N. Y.

PROFESSOR PECK'S NEW WORK ON MECHANICS.—Elements of Mechanics for the use of Colleges, Academies, and High Schools. By WM. G. PECK, M. A., Adjunct Professor of Mathematics in Columbia College, New York. Price, $1 25. Just published by A. S. BARNES & BURR, Nos. 51 and 53 John street, New York.

Extract from the Preface.—"The present volume was intended to occupy the middle ground between the two classes of works (the higher and lower), and to form a connecting link between the Elementary and Higher Treatises. It was designed to embrace all of the important propositions of Elementary Mechanics, arranged in logical order, and each rigidly demonstrated." 1t

IMPORTANT TO INVENTORS.

AMERICAN AND FOREIGN PATENT SOLICITORS.—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN, continue to procure patents for inventors in the United States and all foreign countries on the most liberal terms. Our experience is of thirteen years' standing, and our facilities are unequaled by any other agency in the world. The long experience we have had in preparing specifications and drawings has rendered us perfectly conversant with the mode of doing business at the United States Patent Office, and with most of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

Consultation may be had with the firm, between nine and four o'clock, daily, at their principal office. 37 Park Row. New York. We established, over a year ago, a Branch Office in the City of Washington, on the corner of F and Seventh streets, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at our office.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we may safely say that three-fourths of all the European patents secured to American citizens are procured through our Agency.

Circulars of information concerning the proper course to be pursued in obtaining patents through our Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the principal office or either of the branches.

The annexed letter from the late Commissioner of Patents we commend to the perusal of all persons interested in obtaining patents:—

MESSRS. MUNN & CO.—I take pleasure in stating that while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill, and fidelity to the interests of your employers.

Yours, very truly. CHAS. MASON.

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PURCHASING AGENCY.—AWARE OF THE tricks on Travelers, we have established an Agency for Buying Tickets for any point or place, charging 2 per cent. We refer to railroad-offices generally. Address DINSMORE & CO., No. 9 Spruce street, New York. 1*

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Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache machen. Skizzen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu addressiren an

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Science and Art.

Rather Extraordinary

We find the following paragraph in an exchange:—

"Animalcules have been discovered so small that 1,000,000 would not exceed a grain of sand, and 500,000,000 would sport in a drop of water; yet each of these must have blood-vessels, nerves, muscles, circulating fluids, &c., like large animals."

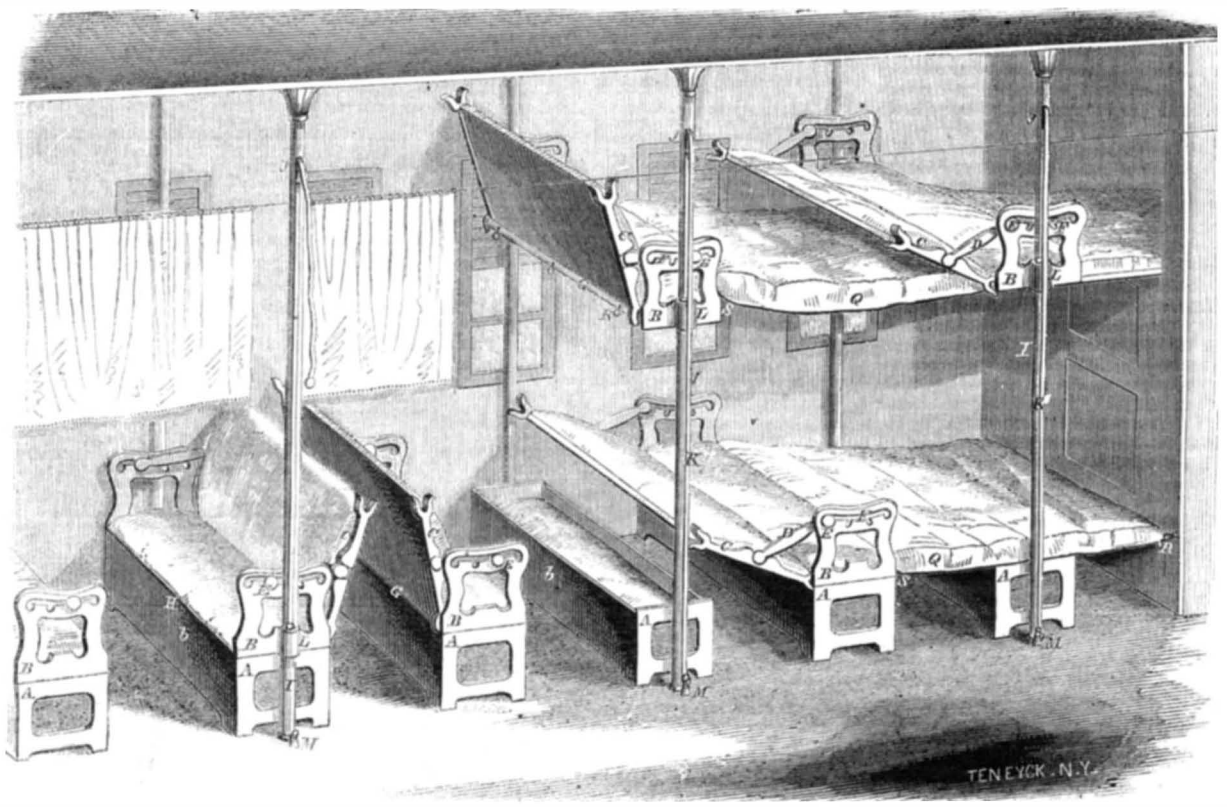
That there may be creatures endowed with life as small as this, we do not deny, for no one can place a limit to the creative powers of Omnipotence, and as His works are vast beyond our comprehension, so they may be too minute for our observation. But we doubt this discovery, for the reason that there is not a microscope in existence that could define the five-hundred-millionth of a drop of water; and it stands to reason that if the animalcules can not be seen, they can never have been discovered. But, says the paragraph, "they *must* have blood-vessels, &c., like large animals," thus showing that the writer of it is in that blissful state, called ignorance, concerning comparative physiology, like the gentleman who defined a crab as "an amphibous fish that walked backwards." There are plenty of animals, *i. e.*, beings endowed with sentient life and having the power of moving from place to place, which have no lungs, blood-vessels, or the like. Living beings, when resolved into their simple elements, are found to be made up of a series of cellular corpuscles, each having a central spot and surrounding matter; and there are some animals that live and move and have their being, which seem to be nothing but isolated corpuscles floating in the world of waters, waiting for some kindred cells to make up a larger body. Such is the *Ameba Princeps*—a jelly-like mass—that moves by altering the shape of its body, which it does by mere volition, as it is without muscles and the similar contrivances by which the will acts upon the higher bodies of animals. The *Ameba* feeds by rushing at some piece of matter smaller than itself, and wrapping its body around it, it absorbs it into itself. The *Infusoria* are nearly all of this character, and the names of their species is legion.

So that it seems there is no *must* about it, and the author who wrote the above paragraph needs to read and observe a little more before he ventures into the domains of natural history or attempts to describe the wonders of the forms of life.

The Filling-up of Harbors.

It is customary for geologists, in estimating the age of this globe, to base their calculations on the formations of deltas—the deposits of rivers—such as the Nile and the Mississippi. They take the thickness of the deposit made yearly as the radical of their estimates, and from this assume that it required myriads of years for all the principal deltas in the world to be formed. If the deposits of rivers were uniform, such conclusions would be inevitably correct, but the fact is, that in some seasons, as much sediment will be carried down in a few months as in others during centuries. A circumstance of this character has just taken place in the harbor of Greytown—the port so celebrated for its filibustering notoriety. The San Juan river flows out to the Atlantic in this harbor, and was formerly of a depth suitable for the largest men-of-war and steamships. Two months ago, the entrance to it was thirty-six feet deep, now it is only eighteen. The whole harbor is rapidly shoaling up, and where American steamers anchored in five fathoms of water four years ago, row-boats now get aground, owing to the vast deposits of weeds and mud. Vessels which formerly found an easy entrance are now compelled to anchor outside, and there is every prospect of this once excellent harbor becoming a lagoon in the course of a very limited number of months.

SIBBET'S RAILROAD SLEEPING CAR.



While traveling or pleasure is an agreeable change from a person's ordinary avocations, yet locomotion gradually loses its charm, and becomes labor in the severest sense of the word, especially by railroad, where the body has to be kept in one position for a thousand miles or more; and one of the great advantages of a sleeping car is, that it allows of a change of position at the proper time, thus rendering a long journey less tedious and more pleasant. From this cause railroad companies adopting sleeping cars are more likely to increase their traffic than those who neglect to obtain the use of this improvement.

Our illustration is a perspective view of the arrangement invented by J. W. Sibbet, of Cincinnati, Ohio, and patented by him Nov. 2, 1858. It is shown arranged for day and night, and the backs are reversible.

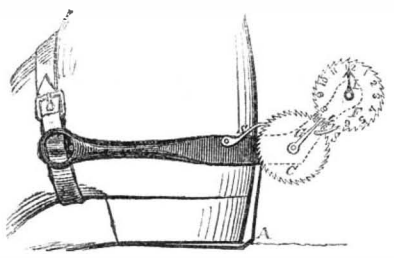
The seats, A, are made with sides, *b*, to form boxes, in which the bedding can be placed in the daytime. The tops of the seats, H, are attached to the arms, B, and each alternate seats is provided with a socket, L, by which it can slide up and down the upright or pole, I, being drawn up and sustained by the band, K, that passes over the pullies, J, and that can be secured to the catch, M. There are also catches in I to sustain the bottom of the seat, and to relieve the bands of the weight of the persons who are laying on the top couch or berth. Each arm is provided with a notched groove, F, in which is a pin, E, of a rod, D, connected with the center of the back, by which the back can be sustained at any angle, the flared notches in its end-pieces fitting on a bar, G, that acts as a fulcrum to the back, and also a support. The car is changed to accommodate the occupants in a sleeping posture by elevating every alternate seat, and unrolling the bedding, Q, hooking one end on hooks R, on the back of the forward seat, and hooking its other end to hooks S, on the seat under which it was stowed away. The bottom seats are made into beds without being elevated, and the end top one is given sufficient length by doubling down the top of the water-closet partition, and placing the bedding over that. To save room, the back of each seat when forming a pillow projects over the foot of the bed behind it.

This car will admit of the same number sleeping as sitting, and as the whole change can be quickly effected by the passengers themselves, they can sleep or sit as suits them, there being no necessity to change all the seats at once. Curtains are provided to secure privacy, and the whole orms an excellent arrangement for the intended purpose.

The inventor will furnish any further information upon being addressed as above, care of S. T. J. Coleman.

Herring's Pedometer.

"Oh dear! I'm so tired, I've walked goodness knows how many miles to-day." This is a very common expression, and it is really a pity that for accuracy's sake the person who makes it does not carry a pedometer to measure the distance which he has perambulated. The pedometer is eminently useful to the traveler, for it enables him to know exactly the distance from place to place, and if he be traveling in a new country he can record it with certainty for the benefit of following wanderers; but it is not carried by many because of its cost, which is rather high, and its construction is somewhat complicated. The one, however, that we illustrate, invented by B. S. Herring, of Portsmouth, Va., is simple and cheap, and is attached to the heel of the shoe or boot, like a spur (for which purpose it can also be used), as shown.



A is a spring which, in the act of walking, operates the wheel, C, that also moves the wheel, F, by an arm, G, that is attached to it. S S are ratchets to prevent the wheels going back. There are 50 teeth in each wheel, and the wearer must in consequence take fifty steps before C will make one revolution, and two thousand five hundred steps before F makes one revolution. Supposing the wearer to start with the hand, I, indicating 12, he will have to step that number of times before it will again indicate the same number; having once measured the distance that is walked in one revolution of F, it can easily be told how much ground has been got over in a given space of time, if the wearer has a watch also, and by observing the number of rotations, the distance between any two points may be measured.

The inventor will furnish any further particulars of this remarkably simple and ingenious device.

The Dudley Observatory.

Professor Mitchell, the distinguished astronomer, has accepted the post of Director of the Dudley Observatory. The event is regarded as a happy close of the Observatory troubles, and is hailed with satisfaction by the citizens of Albany. He will divide his time between his present position at Cincinnati and his new one.

MECHANICS

INVENTORS, MILLWRIGHTS. FARMERS AND MANUFACTURERS.

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